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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

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VOL. LXXXVIII.

JULY TO DECEMBER, 1889.

DUBLIN:
FANNIN AND COMPANY, GRAFTON-STREET.
LONDON: LONGMANS & CO.; SIMPKIN, MARSHALL & CO.
EDINBURGH: MACLACHLAN AND STEWART.
PARIS: HACHETTE & CO.

1889.

DUBLIN: PRINTED BY JOHN FALCONER, 53 UPPER SACKVILLE-STREET.

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THE DUBLIN JOURNAL

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JULY 1, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Child Mortality in Dublin.*[a] By THOMAS WRIGLEY GRIMSHAW, M.A., M.D.; Registrar-General for Ireland; President of the Statistical and Social Inquiry Society of Ireland.

THE high rate of mortality among young children as compared with the general death-rate for the whole population has attracted the attention of all vital statisticians since accurate records of births and deaths have been kept. Especial attention has been frequently called to the high death-rate among young children in Dublin, and to this subject I propose to direct special attention in the present paper. There is a popular idea that the children of the Dublin working classes met with in the slums are a healthy class, and indeed there is some ground for this view, as many active, able-bodied, handsome children—handsome even amidst dirt and rags—are certainly met with in the slums of our city. These fine healthy little creatures are, unfortunately, only the survivors, their less favourably endowed little brothers and sisters have long since passed away, and many even of those able-bodied survivors will, before they grow into adults, in their turn be gradually taken away by disease and death.

In Table I. I have set out a summary of the mortality statistics of young persons in England, Scotland, and Ireland, and in the

[a] Read before the Statistical and Social Inquiry Society of Ireland, July 2nd, 1889.

three Dublin Poor-law Unions for ten years, 1877–86, extracted from the returns of the Registrars-General of the latest available dates:—

Table I.

Deaths *of Young Persons, and Deaths at all Ages during the Ten Years,* 1877–86, *in England, Ireland, and Scotland respectively, and in the three Poor-law Unions* (*Dublin North, Dublin South, and Rathdown*), *into which the Dublin Registration District extends.*

Subject and Locality		Ages—Years				
		Under One	Total under Five	Five and under Ten	Ten and under Fifteen	All Ages
Number living in Census Year, 1881	England . .	753,113	3,520,864	3,147,396	2,800,331	25,974,439
	Ireland . .	104,965	575,983	621,637	616,370	5,174,836
	Scotland . .	109,663	510,591	450,024	404,991	3,735,573
	Three Dublin Poor-law Unions	9,324	43,269	39,187	37,551	403,158
Average Annual Number of Deaths, Ten Years, 1877–86	England . .	126,403	205,454	18,242	9,299	521,769
	Ireland . .	12,125	21,121	3,292	2,291	94,109
	Scotland . .	14,838	26,269	3,233	1,871	74,550
	Three Dublin Poor-law Unions	1,959	3,511	440	244	11,111
Average Annual Death-rate per 1,000 living at each age	England . .	167·8	58·4	5·8	3·3	20·1
	Ireland . .	115·5	36·6	5·3	3·7	18·2
	Scotland . .	135·3	51·4	7·2	4·6	20·0
	Three Dublin Poor-law Unions	210·1	81·1	11·2	6·5	27·6
Percentage to Total Deaths at all Ages, Average, 1877–86	England . .	24·2	39·4	3·5	1·8	100·
	Ireland . .	12·9	22·4	3·5	2·4	100·
	Scotland . .	19·9	35·2	4·3	2·5	100·
	Three Dublin Poor-law Unions	17·6	31·6	4·0	2·2	100·

A study of this Table shows that in England during the decade 1877-86 the annual average number of deaths was 521,769, or at the rate of 20·1 per 1,000 living; of these, 205,454, or 39·4 per cent., were of children under 5 years of age, being at the rate of 58·4 per 1,000 of those living at that age period, and 126,403 of the total annual average, or 24·2 per cent., were of infants under 1 year of age, being at the rate of 167·8 per 1,000 living at that age, according to the census of 1881.

In Scotland during the same decade the average annual number of deaths at all ages was 74,550, or at the annual rate of 20·0 per 1,000 living. Of these deaths 26,269, or 35·2 per cent., were of children under 5 years of age, or at the rate of 51·4 per 1,000 living at that age period; 14,838, or 19·9 per cent. of the whole, being of children under 1 year of age, or at the rate of 135·3 per 1,000 infants under 1 year, according to the census of 1881.

Turning to Ireland we find that during the same decade the average annual number of deaths at all ages was 94,109, or at the average rate of 18·2 per 1,000 living. Of these, 21,121, or 22·4 per cent., were of children under 5 years of age, or at the rate of 36·6 per 1,000 living at that age period, and 12,125, or 12·9 per cent., of the total annual average, were under 1 year of age, being at the rate of 115·5 per 1,000 living at that age.

We thus find that the annual death-rate per 1,000 among infants under 12 months is in England 167·8, in Scotland 135·3, and in Ireland 115·5. For children under 5 years of age the rates are—England 58·4, Scotland 51·4, Ireland 36·6.

We thus arrive at the broad result that the death-rate of infants and young children is much lower in Ireland than it is in England or Scotland.

There can be no doubt that one cause of the lower mortality of children in Ireland than in England and Scotland is owing to the fact that the proportion of the population of the sister countries living in towns far exceeds that of Ireland—and the death-rate of town children far exceeds that of country children. The population of England in 1881 was 25,974,439, of whom 14,626,131, or 56·3 per cent., lived in towns of over 10,000 inhabitants. In Ireland the population at the same period was 5,174,836, of whom 845,839, or 16·3 per cent., lived in towns with a population of over 10,000 inhabitants. No doubt the general death-rate of town populations is greater than that of country populations, but at early ages this excessive death-rate is much accentuated. As already pointed out

the death rate of young children in Ireland is lower than that for England or Scotland.

Besides the figures already referred to in Table I., statistics are given for the three Poor-law unions or Superintendent Registrars' districts, which include, in their area, the city and suburbs of Dublin, and a considerable portion of the surrounding country—in fact, the whole of what may be considered as the Dublin population, in its widest sense, as distinguished from the population of the Dublin registration district. The area included in these unions contained a population of 403,158 in 1881. During the decade of 1877-86 the deaths averaged 11,111 per annum, or at the annual rate of 27·6 per 1,000 living. Of these deaths 3,511, or 31·6 per cent., were of children under five years of age, or at the rate of 81·1 per 1,000 of persons living at that age. Of these an average of 1,959 per annum were infants under one year of age, or at the rate of 210·1 per 1,000 of children living at that age, according to the census of 1881.

We have thus before us the very remarkable facts that Dublin is situated in a country where the death-rate of children is low, as compared with neighbouring countries, yet, when we compare the child mortality of Dublin with other large towns of the United Kingdom, we find that it is comparatively high, not only as compared with English and Scotch towns, but also with the large Irish cities, Belfast and Cork.

In Tables II. and III., are set out for the ten years, 1879-88, the statistics of deaths and rates of mortality from all causes at all ages, in thirteen of the larger towns of the United Kingdom.

These Tables show that the average death-rate of Dublin, for the decade in question, was the highest rate for any of the large towns of the United Kingdom referred to, including eight English, two Scotch, and three Irish, all except Cork having populations of upwards of 200,000.

It might naturally be expected that the towns with the highest general death-rate, would also have the highest child death-rate. This we find to be markedly the case with Dublin.

Table II.

Deaths *from all Causes at all Ages in Thirteen Large Towns of the United Kingdom, during the Ten Years* 1879-88.

TOWNS	Estimated Population in 1881	Total Deaths from all Causes										
		1879 (53 weeks)	1880	1881	1882	1883	1884 (53 weeks)	1885	1886	1887	1888	Average Yearly Number, 1879-88
London . . .	3,831,719	85,540	81,128	81,071	82,905	80,578	83,050	80,000	82,276	82,208	78,848	81,760
Liverpool . .	554,073	14,818	14,811	14,733	14,818	15,074	14,691	13,764	13,919	14,006	12,159	14,279
Birmingham . .	402,314	8,766	8,172	8,009	8,527	8,824	9,145	8,248	8,628	8,668	7,954	8,494
Manchester . .	341,173	9,882	9,185	8,664	9,057	9,344	9,071	8,902	9,894	10,786	9,834	9,462
Leeds . . .	310,483	7,150	6,688	6,675	7,321	7,454	8,034	6,621	7,399	7,241	7,209	7,179
Sheffield . .	285,619	6,422	6,410	5,993	6,281	6,755	6,832	6,305	6,131	6,808	6,586	6,452
Bristol . . .	207,522	4,493	4,276	4,054	4,021	3,795	4,024	4,282	4,253	4,546	3,816	4,156
Bradford . .	184,035	4,106	4,109	3,612	4,142	3,743	4,286	3,791	4,188	4,460	3,924	4,036
Dublin . . .	347,013	10,885	11,008	9,180	9,461	9,905	9,538	9,734	9,236	10,513	8,661	9,812
Belfast[a] . .	208,822	—	—	4,911	5,365	5,600	5,073	6,127	5,256	5,807	5,742	5,485[a]
Cork[a] . . .	80,124	—	—	2,101	1,935	1,993	2,139	2,098	1,769	1,792	1,934	1,970[a]
Edinburgh . .	229,219	4,432	4,946	4,613	4,565	4,544	4,865	4,554	4,889	5,097	4,736	4,724
Glasgow . .	511,914	12,498	13,304	12,916	13,046	14,577	13,942	13,492	13,104	12,128	11,675	13,068

[a] Belfast and Cork for *eight* years only.

TABLE III.

DEATHS (*from all Causes*) *per* 1,000 *of Population in Thirteen Large Towns of the United Kingdom during the Ten Years* 1879-88.

TOWNS	Estimated Population in 1888	DEATHS from all Causes per 1,000 of Population										
		1879 (53 weeks)	1880	1881	1882	1883	1884 (53 weeks)	1885	1886	1887	1888	Average Yearly Rate
London . .	4,282,921	22·7	21·6	21·2	21·4	20·4	20·3	19·8	19·9	19·6	18·5	20·5
Liverpool . .	599,738	26·9	27·1	26·7	26·5	26·7	25·2	23·8	23·8	23·7	20·3	25·1
Birmingham . .	447,912	22·1	20·7	20·0	20·9	21·3	21·4	19·3	19·9	19·7	17·8	20·3
Manchester . .	378,164	28·3	26·9	25·5	26·7	27·6	26·4	26·5	26·3	28·7	26·1	26·9
Leeds . . .	351,210	23·5	22·0	21·6	23·2	23·3	24·2	19·9	21·9	21·1	20·6	22·1
Sheffield . .	321,711	22·9	22·9	21·1	21·7	22·9	22·4	20·7	19·8	21·6	20·5	21·7
Bristol . . .	226,510	21·9	21·0	19·6	19·2	17·9	18·4	19·7	19·3	20·4	16·9	19·4
Bradford . .	229,721	22·9	22·9	19·7	21·2	18·3	20·1	17·7	19·2	19·9	17·1	19·9
Dublin . .	353,082	34·6	35·9	27·0	27·2	28·3	27·2	27·6	26·2	29·8	24·5	28·8
Belfast [a] . .	227,022	—	—	23·6	25·8	26·2	23·4	27·9	23·7	25·9	25·3	25·2 [a]
Cork [a] . . .	80,124	—	—	26·8	24·7	24·9	26·7	26·2	22·1	22·4	24·1	24·7 [a]
Edinburgh . .	262,733	19·9	21·9	20·1	19·6	19·2	19·7	18·2	19·2	19·7	18·0	19·6
Glasgow . . .	526,088	24·6	26·1	25·2	25·4	28·2	26·9	25·9	25·1	23·1	22·2	25·3

[a] Belfast and Cork for *eight* years only.

Table IV.

Deaths *of Infants under One Year old in Thirteen Large Towns of the United Kingdom during the Ten Years*, 1879-88.

TOWNS	Deaths of Infants under One Year old.											
	1879 (53 weeks	1880	1881	1882	1883	1884 (53 weeks)	1885	1886	1887	1888	Average Yearly Number 1879-88	Percentage to Total Deaths
London . .	19,810	20,907	19,575	20,122	19,487	21,369	19,594	21,231	21,015	19,196	20,231	24·7
Liverpool . .	3,458	3,961	3,587	3,641	3,686	3,984	3,391	3,670	3,420	2,981	3,578	25·1
Birmingham . .	2,396	2,614	2,241	2,481	2,361	2,613	2,265	2,509	2,463	2,110	2,405	28·3
Manchester . .	2,201	2,293	2,020	2,231	2,146	2,277	2,136	2,501	2,577	2,346	2,273	24·0
Leeds . .	1,879	1,968	1,900	2,035	1,849	2,125	1,772	2,068	1,973	1,975	1,954	27·2
Sheffield . .	1,657	1,762	1,682	1,787	1,764	1,936	1,747	1,774	1,839	1,758	1,771	27·4
Bristol . .	1,109	1,047	891	981	911	987	1,029	1,000	985	815	976	23·5
Bradford . .	956	1,103	924	1,108	869	1,123	889	1,051	1,107	962	1,009	25·0
Dublin . .	1,949	2,319	1,602	1,874	1,794	1,827	1,789	1,715	1,965	1,638	1,847	18·8
Belfast[a] . .	—	—	944	1,031	1,084	913	1,215	989	1,223	1,117	1,065[a]	19·4
Cork[a] . . .	—	—	271	282	236	253	247	225	252	288	257[a]	13·0
Edinburgh . .	881	1,076	940	888	880	1,013	885	1,012	1,038	955	957	20·3
Glasgow . .	2,504	2,842	2,745	2,959	3,091	3,094	3,100	2,786	2,660	2,517	2,830	21·7

[a] Belfast and Cork for *eight* years only.

Table V.

DEATHS *under One Year per* 1,000 *of Registered Births in Thirteen Large Towns of the United Kingdom during the Ten Years*, 1879–88.

TOWNS	No. of Deaths under one Year per 1,000 of Registered Births.										
	1879 (53 weeks)	1880	1881	1882	1883	1884 (53 weeks)	1885	1886	1887	1888	Average Annual Rate
London	148	158	148	151	146	155	148	159	158	146	152
Liverpool	163	191	173	178	185	194	174	188	186	168	180
Birmingham	151	172	150	167	160	174	157	175	176	154	164
Manchester	165	179	161	179	177	183	175	183	191	176	177
Leeds	161	173	167	179	166	184	155	181	172	173	171
Sheffield	153	164	155	165	163	172	164	168	177	178	166
Bristol	145	146	125	142	133	143	152	149	149	123	141
Bradford	150	174	153	178	146	181	143	167	178	153	162
Dublin	195	231	158	186	180	178	176	168	200	166	184
Belfast [a]	—	—	136	151	162	126	170	135	163	145	149 [a]
Cork [a]	—	—	125	127	109	115	120	110	123	140	121 [a]
Edinburgh	119	143	128	122	129	136	120	136	137	127	130
Glasgow	127	150	144	150	155	151	156	140	138	130	144

[a] Belfast and Cork for *eight* years only.

In Table IV. are set out the deaths of children under one year of age in thirteen towns for the ten years, 1879-88, and in Table V. we have the number of deaths of children under one year of age compared with the number of births registered during the same decade. This will be found to be a more exact method of measuring infant mortality than a comparison with the number of children living, or estimated to be living, at the age under one year.

It has been generally found that where there is an excessive birth-rate there is an excessive death-rate, the rate being raised by the deaths among children, and thus the cause of the high death-rate, both general and infantile, has been explained for the population of manufacturing towns. Married women working in mills being unable to nurse their own children, are more liable to frequent pregnancies, and their children, being artificially fed and not having the proper amount of maternal care, are more liable to disease and death than the children of country mothers.

Dublin, however, is not a manufacturing town in the sense which necessitates the large employment of women, married and unmarried, in mills and factories; the birth-rate of Dublin is not high. Therefore this class of causes of high death-rate among children does not exist to any appreciable extent in Dublin.

Tables VI. and VII. have been prepared with the view of testing and illustrating this point. In Table VI. the birth-rates of the thirteen selected towns are set out for the decade 1879–88, from which it will be seen that the lowest rate—26·56—is to be found in Cork, and the highest—37·00—in Glasgow. Dublin occupies a place next to Cork, being the lowest but one, and having a birth-rate of only 29·31 per 1,000 of the population.

In Table VII. the thirteen towns are arranged in scales according to the position occupied by them under the various heads we have been considering. From this Table it appears that Dublin occupies the worst position both as regards total deaths and infantile deaths, and is the lowest but one (Cork) in its birth-rate, although in the ratio of infantile death-rate to total death-rate it only stands at 18·8 per cent. (Table IV.), and in this respect also is the lowest except Cork.

Tabee VI.

Births in Thirteen Large Towns of the United Kingdom—Eight English, Three Irish, and Two Scotch.

Table of Birth-rates for Ten Years 1879-88.

Cities and Towns	Births per 1,000 of the Population										
	1879 (53 weeks)	1880	1881	1882	1883	1884 (53 weeks)	1885	1886	1887	1888	Average, 1879-88
London	36·5	36·2	34·7	34·3	33·9	33·7	32·6	32·3	31·7	30·7	33·66
Liverpool	38·9	38·3	37·6	36·7	35·2	35·2	33·7	33·5	31·2	29·7	35·00
Birmingham	40·1	38·6	37·2	36·6	35·6	35·2	33·8	33·0	31·8	30·8	35·27
Manchester	36·3	35·3	36·9	36·7	36·0	36·2	36·4	36·3	35·9	35·3	36·13
Leeds	36·9	35·7	36·8	36·1	34·7	34·8	34·4	33·9	33·3	32·6	34·92
Sheffield	35·9	35·3	38·0	37·4	36·7	36·9	35·0	34·1	32·9	30·8	35·30
Bristol	35·8	33·8	34·5	33·1	32·3	31·5	31·2	30·5	29·7	29·3	32·17
Bradford	32·9	32·3	33·0	31·8	29·2	29·2	29·1	28·8	27·7	27·4	30·14
Dublin	31·8	32·0	29·1	28·9	28·5	29·3	28·7	28·9	27·9	28·0	29·31
Belfast[a]	—	—	33·4	32·8	31·3	33·4	32·7	33·1	33·5	34·0	33·03[a]
Cork[a]	—	—	27·7	28·2	27·0	27·4	25·6	25·4	25·5	25·7	26·56[a]
Edinburgh	32·8	32·8	32·0	31·4	29·0	30·3	29·4	29·2	29·2	28·5	30·46
Glasgow	34·1	32·0	37·3	38·4	38·6	39·7	38·2	38·1	36·9	36·7	37·00

[a] Eight years.

Table VII.

Infant Mortality, &c., *in Thirteen Large Towns of the United Kingdom. Average of Ten Years*, 1879-88.

TOWNS Arranged according to Infant Mortality in proportion to Births—lowest to highest	Position in Scale of 1 to 13, the *Lowest* Rate in each case being represented by 1			
	Deaths under 1 year to 1,000 Births	Births per 1,000 of Population	Total Deaths per 1,000 of Population	Percentage of Deaths of Infants under 1 year old to Total Deaths
Cork[a] . . .	1	1	8	1
Edinburgh . . .	2	4	2	4
Bristol . . .	3	5	1	6
Glasgow . . .	4	13	11	5
Belfast[a] . . .	5	6	10	3
London . . .	6	7	5	8
Bradford . . .	7	3	3	9
Birmingham . .	8	10	4	13
Sheffield . . .	9	11	6	12
Leeds . . .	10	8	7	11
Manchester . . .	11	12	12	7
Liverpool . . .	12	9	9	10
Dublin . . .	13	2	13	

Thus the population of Dublin is an exception to the rule that a high death-rate and a high birth-rate generally—though by no means so generally as some think—are coincident. We thus see that it is not the employment of our female population in factory work, to which excessive child mortality has been largely attributed in England, which leads to the excessive death-rate among Dublin children. What, then, are the causes? The four following have been assigned as the main causes, and let us now examine them:—

1st. The large proportion of very poor in Dublin.

2nd. The inferior house accommodation of the artisan and labouring classes.

3rd. The habits of the people.

[a] Eight Years 1881-88.

4th. Carelessness with regard to children in general, and of sick children in particular.

Firstly, the supposed large proportion of very poor people in Dublin. I advisedly use the word "supposed," as there are no statistical or other facts which prove that there is a greater want of the necessities of life in Dublin than elsewhere. The different methods of administering poor relief in the different divisions of the United Kingdom preclude the possibility of making comparisons between English, Scotch, and Irish towns. Even in Ireland itself, from various reasons, the methods of granting indoor and outdoor relief vary so much in different districts that statistical comparisons would be misleading. While I believe that there is in Dublin an undue proportion of very poor—just as in the east end of London—as compared with the well-to-do, I have no proof to offer in support of my opinion. Assuming, however, that this opinion is correct, there can be no doubt it would account for much of the high death-rate among children. It is now a well-ascertained fact that the death-rates at all ages among the lower social strata of society are greater than among the upper strata, and this is still more remarkable in the case of children. Although in the case of poverty we have no standard for comparing Dublin with other places, on the other hand, the "Social Condition" Table for Dublin in the census of 1881, and the weekly death-rate Tables, we have the means of comparing each class of the Dublin population with the others. Table VIII. supplies this information for the population at all ages for five years, 1884–88, and Table IX. supplies it for children under five years of age for the same period.

Taking the average of the five years under consideration, we find (Table VIII.) that the death-rate at all ages varied from 13·8 per 1,000 in the "Professional and Independent Class" to 34·8, or about $2\frac{1}{2}$ times as much, in the "General Service and Inmates of Workhouses Class." When we come to children under five years of age, as shown in Table IX., the difference is still more remarkable, the rate being 18·2 per 1,000 living at this age period for the "Professional and Independent Class," and 116·9 per 1,000, or over six times as much, in the "General Service and Inmates of Workhouses Class." This latter figure is really something startling in a civilised community.

Secondly, the inferior house accommodation of the artisan and labouring classes.

Table VIII.

Deaths in Dublin Registration District, Five Years, 1884–8.

Death-rate *per* 1,000 (*of Population in* 1881) *for each Class of "Occupation" or "Social Position"—all Ages.*

Classes of "Occupation" or "Social Position"	Population in 1881	Death Rate—Year						
		1884 (53 weeks)	1885	1886	1887	1888	Total, 5 years	Average, 5 years, 1884–8
Deaths in Families of the—								
1. Professional and Independent Class	30,129	14·4	14·0	13·4	14·5	12·9	69·2	13·8
2. Middle Class . .	56,761	27·2	27·6	27·3	29·5	24·4	136·0	27·2
3. Artisan Class and Petty Shopkeepers	106,142	22·7	24·5	22·3	26·3	21·5	117·3	23·5
4. General Service Class .	147,625	35·2	35·4	33·7	38·2	31·5	174·0	34·8
5. Inmates of Workhouses	6,036							
Total,	346,693	28·3	28·9	27·4	31·1	25·7	141·4	28·3

Table IX.

Deaths *of Children under Five Years of Age in each Class of "Occupation" or "Social Position."*

Classes	No. of Children under 5 years of age by Census of 1881	Deaths under 5 Years of Age							
		Number in each year						Average of 5 years	
		1884 (53 weeks)	1885	1886	1887	1888	Total, 5 years	No. of Deaths	Rate per 1,000 Children under 5 years
Deaths in Families of the—									
1. Professional and Independent Classes	2,247	52	49	37	44	24	206	41	18·2
2. Middle Class .	6,188	405	368	349	422	304	1,848	370	59·8
3. Artisan Class and Petty Shopkeepers	12,895	880	993	833	1,108	833	4,647	929	72·0
4. General Service Class	16,111	1,790	1,884	1,707	2,349	1,682	9,412	1,883	116·9
5. Inmates of Workhouses									
All Classes .	37,441	3,127	3,294	2,926	3,923	2,843	16,113	3,223	86·1

I have dealt with this subject in another place,[a] in which I have shown that the concentration of families in single houses is very great. Much improvement has taken place in this respect during the past 10 or 15 years, and is still in active progress, but still proportionally not sufficiently to show in the death-rate of children.

Thirdly, the habits of the people are of such a nature as to lead to negligence.

There can be little doubt that the extremely intemperate habits of the lower classes of the people of Dublin have much to do with the high death-rate among children. The children of drunken parents are not born healthy, and when born are neglected in every conceivable way and are exposed to dangers from reckless negligence, which are almost inconceivable among civilised people.

A comparison between the rates of mortality and the rates of drunkenness, as measured by the criminal statistics of large towns, shows that there is a close relationship between the two.

[a] "The House Accommodation of the Artisan and Labouring Classes in Ireland, with Special Reference to Dublin and other Large Towns." Dublin Journal of Medical Science, July, 1885. From this paper the following figures are extracted :—

TABLE *showing, for the City of Dublin, the Number of Families occupying Fourth-class Accommodation, and residing in Houses of the First and Second Class, at each Census period from* 1841 *to* 1881, *inclusive.*

	Per cent. of Families in 4th Class Accommodation	Fourth Class Accommodation in First Class Houses			Fourth Class Accommodation in Second Class Houses		
		Houses	Families	Families per House	Houses	Families	Families per House
1841	46·9	1,503	11,864	7·9	1,903	10,151	5·3
1851	48·9	1,921	15,768	8·2	2,122	11,341	5·3
1861	46·7	2,070	15,964	7·7	2,071	10,371	5·0
1871	44·5	1,999	15,056	7·5	2,040	9,893	4·8
1881	42·7	1,744	13,009	7·5	1,983	9,575	4·8

This statement shows that there were, in 1881, 1,744 first-class and 1,983 second-class houses let in tenements, making in all 3,727 houses of this kind. The larger tenement houses were occupied by 13,009 families, or at the rate of 7·5 families per house, and the smaller houses by 9,575 families, or at the rate of 4·8 families per house. In all there were at the time of the Census 22,584 families, or over 100,000 persons living in these old, degenerated, and dilapidated houses.

The concentration of families in single houses is in many cases very great. Thus, there were in Dublin, in 1881, 102 houses of the first class, containing 1,020 families. There were many more houses containing larger numbers of families, the details of which will be found in Table VIIIA. of the Dublin Census Book.

In an address delivered at the Dublin Sanitary Association, in the year 1888, I compared, for the year 1886, Dublin with thirteen other towns of the United Kingdom having populations of over 200,000, with the results shown in the following Table (Table X.) extracted from the report of the Dublin Sanitary Association for the year 1887.

Table X.

Table *showing for each Town in the United Kingdom with over* 200,000 *Inhabitants the Rates per* 1,000 *of the Population represented by the Deaths Registered during the Year* 1886, *and by the Number of Cases of "Drunkenness" and "Drunkenness and Disorderly Conduct" at Police Courts in the same Year.*

Towns arranged according to Death-rates from lowest to highest.	Estimated population	Deaths		Cases of Drunkenness		Position as regards Drink-rate, lowest to highest
		Number	Rate per 1,000 of population	Number	Rate per 1,000 of population	
1. Bradford .	219,411	4,188	19·2	320	1·5	1
2. Edinburgh .	254,591	4,882	19·2	2,340	9·2	9
3. Bristol .	220,915	4,253	19·3	957	4·3	4
4. Sheffield .	310,957	6,131	19·8	801	2·6	2
5. London .	4,149,533	82,276	19·9	25,856[a]	5·4	5
6. Birmingham .	434,381	8,628	19·9	2,871	6·6	6
7. Nottingham .	217,733	4,419	20·4	1,829	8·4	8
8. Leeds .	339,057	7,399	21·9	1,468	4·3	3
9. Salford .	211,241	4,643	22·1	1,722	8·2	7
10. Belfast .	221,822	5,256	23·7	5,752	25·9	13
11. Liverpool .	586,320	13,919	23·8	12,568	21·4	12
12. Glasgow .	521,999	13,099	25·1	11,002	21·1	11
13. Dublin .	353,082	9,236	26·2	12,699	35·7	14
14. Manchester .	376,895	9,894	26·3	7,288	19·3	10
Total of 14 Towns,	8,417,937	178,223	21·2	87,473	10·4	—

[a] Metropolitan Police District, Dockyards Police, and City of London—Population taken as 4,766,661.

From this it appears that, in 1886, Dublin was distinguished by having the highest drink-rate with all but the highest death-rate (being within 0·1 per 1,000 as high as Manchester), and, as I have already shown, having a specially high rate of child mortality as given in Table V. The towns quoted in the two Tables are not exactly the same. Table X. includes Nottingham and Salford, which are not in Table V., while Table V. includes Cork and omits the two former towns. The result, however, is that we find the high drink-rate of Dublin corresponding with a high infant mortality, which I need scarcely say is exactly what might be expected.

Fourthly, negligence with regard to the care of young children in general, and of sick children in particular.

The carelessness with respect to child life in Dublin is shown by the large proportion of children who die without being medically attended during their last illness.

Table XI.

Dublin.

Table *showing by Ages the Number and Proportion of Certified and Uncertified Deaths during the First Quarter of the Year* 1889.

Ages.	Total Deaths	Uncertified	Proportion Per cent. Uncertified
All ages	2,521	311	12·3
Under one month . . .	149	80	53·7
One month, and under one year .	269	73	27·1
Total under one year .	418	153	36·6
One year, and under five years .	271	44	16·2
Total under five years	689	197	28·6
Five years, and under twenty .	200	7	3·5
Twenty „ „ forty .	410	16	3·9
Forty „ „ sixty .	544	28	5·1
Sixty „ „ eighty .	563	40	7·1
Eighty and upwards . .	115	23	20·0

In Table XI. are shown for the first quarter of the present year, the number of "uncertified deaths" in the Dublin registration district, and their relation to the total number of deaths.

From this Table it appears that of 2,521 deaths in the Dublin Registration District, 311, or 12·3 per cent., have not had their causes certified, the deceased persons not having had any medical attendant during the last illness. Of these 311 there were 197, or about two-thirds, in children under 5 years of age. Of deaths in children under one month 53·7 per cent., or more than one half, were uncertified; of those under one year 36·6 per cent., or more than one-third, were uncertified.

In Table XII. similar statistics are given for London, which show the remarkable fact that, during the period under review, there were fewer uncertified deaths in the great London district than in the Dublin district.

Table XII.

London.

Table showing by Ages the Number and Proportion of Certified and Uncertified Deaths during the First Quarter of 1889.

Ages	Total Deaths	Uncertified	Proportion per cent.
All Ages	21,138	263	1·2
Under one month . . .	1,296	78	6·0
One month, and under one year .	3,177	50	1·6
Total under one year .	4,473	128	2·9
One year, and under five years .	3,573	39	1·1
Total under five years .	8,046	167	2·1
Five years, and under twenty .	1,202	5	0·4
Twenty „ „ forty .	2,385	8	0·3
Forty „ „ sixty .	3,738	28	0·7
Sixty „ „ eighty .	4,719	43	0·9
Eighty, and upwards . .	1,048	12	1·1

It is remarkable, however, that the relative proportions of uncertified deaths of young children to the total uncertified are nearly the same in both districts. Thus of the 311 uncertified deaths in Dublin district, 197, or 63·3 per cent., were in children under 5 years of age; while in London, of the 263 uncertified deaths, 167, or 63·5 per cent., were in children under 5 years—thus showing that as regards children the relative negligence is the same, while the total negligence is much greater in Dublin than in London.

In Table XIII. are given the number and proportion of deaths from certain non-infectious forms of disease, which are the main causes of death among young children.

Table XIII.

Dublin Registration District.

Deaths *from Tubercular Meningitis, Mesenteric Disease, and Convulsions, and Deaths of Children under Five Years of Age from Diarrhœa during the Five Years*, 1884–88.

YEARS, &c.		Deaths from			
		Tubercular Meningitis	Mesenteric Disease	Convulsions	Diarrhœa—Children under 5 years of age
1884[a] . .		232	255	761	247
1885 . .		258	220	792	105
1886 . .		176	249	763	190
1887 . .		159	212	893	293
1888 . .		140	186	671	140
Total, 5 years, 1884–8 .		965	1,122	3,880	975
Yearly average, 5 years, 1884–8	Number . .	193	224	776	195
	Rate per 1,000 children under 5	5·1	5·9	20·4	5·1
	Percentage to total deaths under 5 years of age	6·0	7·0	24·1	6·1

It will be observed that 24·1 per cent., or about one-fourth of all the deaths among children under five years of age, are ascribed to convulsions. Many of these may be cases of bad food, gross

[a] Fifty-three weeks.

negligence, or injury, concerning which no particulars could be ascertained, there being in many instances no medical attendant at all, and in others only a medical attendant called in at the last to see the little one pass away in convulsions, but without having had the opportunity of ascertaining the previous nature of the illness.

Many of the cases of meningitis appear to originate in knocks on the head, either by accident or design, through carelessness, or cruelty. Many cases of diarrhœa originate in bad, or badly prepared, food; and this cause also operates actively in promoting mesenteric disease. The frequency with which young children are shut up alone, leads to many accidents—among others to accidents by fire, often of a terrible character.

Most of the members of the Statistical Society are aware that recently a movement has been started in Dublin for the Prevention of Cruelty to Children, and one of the objects I have in view in bringing this matter prominently before this Society is that the information contained in the paper may serve as an indication of the necessity there is for taking measures to improve the conditions of child-life in Dublin. It is necessary not merely to save the lives of little children, but to secure that those who do survive the dangers of infancy and early childhood may have a fair chance of growing up into healthy men and women, sound in body, mind, and soul, both good and useful, and capable of fulfilling the duties for which Providence intended them.

ART. II.—*A Medico-Statistical Sketch of Modern Alexandria.* By BRIGADE-SURGEON ALBERT A. GORE, Army Medical Staff, Senior Medical Officer.

WHEN Alexander the Great, after his conquest of Syria, had advanced into Egypt, and by the taking of Memphis secured the possession of the country, he founded Alexandria B.C. 332, 12 miles from the Canopic mouth of the Nile, which up to then had been alone open to foreigners, principally Greeks. Strabo, who visited the city 24 years B.C., found Lake Mareotis fed by several canals from the Nile, by which much merchandise was imported. He noticed the then salubrity of the air, which he attributed to its peninsular situation and to the opportune rising of the Nile, which filled the lake in the summer season and prevented its becoming marshy by evaporation, while the north wind passing over so much sea secured an agreeable temperature in summer.

He found the city intersected with spacious streets, through which horses and chariots passed freely, and its temples, public buildings, and palaces occupied nearly a third of the whole extent. In the suburbs were many gardens and tombs, with apartments set apart for the embalming of the dead. The circumference of the ancient city was said by Pliny to be 15 miles—in magnificence only inferior to Rome. Through it flowed the lucrative trade of Arabia and India. Its population, under the Ptolemies and Cæsars, numbered 500,000, including many slaves. Its school of learning and library had a world-wide renown, but at the commencement of the 3rd century it begun to wane; yet when Amrú, Omar's lieutenant, took it A.D. 641, after a siege of 14 months, he found there still 4,000 palaces, a like number of baths, 400 places of amusement, and 12,000 gardens, and one quarter occupied by 40,000 Jews. In 1777 its Turkish population had dwindled to 6,000 souls, little changed when the French garrison, 10,582 strong, surrendered to the British in 1801; but soon after Mehemet Ali began to rule Egypt new buildings sprung up in every direction, the European quarter became developed, and in 1835 its population had increased to 35,000. To-day it is 249,000, with an annual mortality of 48·9 per 1,000, a fine harbour and many handsome public and private buildings, few traces remaining of the bombardment of 1882. It is the favourite summer residence of his Highness the Khedive, whose palace is at Ras-el-Teen, on the ancient island of Pharos.

Several ancient writers—Diodorus, Strabo, Quintus Curtius, and Celsus—speak of the climate of Alexandria as having been healthy in their time, with a temperature both cool and salubrious, attributed to the admission of the Nile water into Lake Mareotis. The climate in the winter is agreeable, as a rule, but oftentimes cold from tempestuous weather and rain, which falls occasionally from October to February. These sudden changes are very trying when one is not properly clothed. The average rainfall per annum is $7\frac{3}{4}$ inches, the extremes recorded being $111\frac{1}{4}$ and $2\frac{3}{4}$ inches. The temperature ranges from 55° Fahrenheit—the mean for January—to 88° Fahrenheit—the mean for August. The thermometer in the shade seldom ranges above 86°, very rarely reaches 95° or falls below 50°. The prevailing N.W. wind is cool but damp, especially in the months of July, August, September, and October, when the relative humidity is high. The S.E. wind, which blows across the lake or foul foreshores, is said to be unhealthy and productive of fever, and sometimes offensive from decaying animal

and vegetable matter left exposed as the Nile or lake-water falls. This wind in the spring turns into a dry, hot, disagreeable "*khamsin*," which blows for several days at a time at irregular intervals during April, May, and June; on such occasions the relative humidity falls as low as 26 per cent., and the temperature in the shade rises as high as 110°. At this period eye affections are more prevalent, especially among women and children, owing to the glare and fine dust, but they are readily amenable to treatment in a darkened room by means of strict attention to cleanliness, isolation, and astringent collyria.

In the market ample supplies of fish, meat, fowls, bread, fruit, and vegetables are exposed for sale. The Greek islands supply game, the harbour oysters, and Italy wine—pure, full-bodied, and not expensive. The oke (2¾ lbs.) is the standard weight, and the piastre (2½d.) the current coin. For water the city depends upon the Mahmoodeyeh Canal, opened in 1820, which taps the Rosetta branch of the Nile at the village of Atfeh, 50 miles distant. It receives many impurities from the villages along its banks, has a slow current, is navigable, but the water is filtered prior to distribution at the waterworks, and in most houses afterwards passes through porous zeers and charcoal filters; in barracks and hospitals boiling is used as an additional precaution. When so treated it is clear, odourless, agreeable to the palate, neutral, about 1 grain to the gallon of lime, ·5 of chlorine, 2 of sulphuric acid, with no traces of ammonia, nitric or nitrous acid, or phosphoric acid. Total hardness, 2·45. A litre of Nile water analysed at Cairo by Ismalan on July 10th, when the river was rising, gave the following result:—

Total organic matters	0·1810
Lime	0·0582
Magnesia	0·0315
Chloride of sodium	0·0146
Acid, sulphuric	0·0102
,, phosphoric	nil
Sesqui-oxide of iron	0·0215
Matters in suspension	2·1700
Calcined inorganic residue	1·9950

The suspended matters were matters coloured by chlorophyll, confervæ, diatoms, desmidiaceæ, daphnia, when becoming putrid bacterium termo. Wells are now seldom used, but those in the town are very impure, containing much lime, chlorine, and marked indications of sulphuric, phosphoric, and nitric acids.

A Commission appointed by his Excellency Rias Pasha to consider the question of the improvement of the water-supply to the town of Alexandria met on Feb. 3rd, 1889, and decided to recommend that all drains running into the Mahmoodeyeh Canal from the villages along the banks should be closed, and that fresh outlets for the drains should be made to discharge on the land side; that strict orders should be given to the inhabitants along the banks to cease making the canal the receptacle for every description of rubbish and filth, and that these orders should be enforced by severe punishment if disregarded; that carcases of animals should be promptly removed when seen in the canal, and that it should be systematically patrolled under the direction of the irrigation department, who, on their part, would open the lock at Kafr Dawar once every ten days in order to allow a good flush of fresh water to come in from the Katatheh Canal. It was hoped that by these measures danger to health might be avoided, and a fair water supply ensured during the period of abnormally low Nile.

In the neighbourhood of Ramleh, a much-frequented suburb of Alexandria, and summer resort of many Europeans from Cairo, the evil consists of a recent tertiary light-coloured sand, and a sandy limestone, composed chiefly of broken fragments of shells (condylia). Alexandria is founded on an alluvium and permeable sand, much saturated in parts with sewage, leakages from cesspits, and badly-formed drains. During the year 1888 no less than 472 human corpses were found in the Nile. The quality of the water (especially when the river is low) is sometimes complained of. Pestilential emanations from the sewers in certain quarters occur with the increasing temperature, and at the fall of the year, when their contents are stirred up by heavy rain. Goats, buffaloes, and cows yield a supply of milk no doubt frequently adulterated with such water. Aerated water is much drunk by the better classes, a piastre a siphon. In one of the principal manufactories I found the water carefully filtered, but cheaper kinds are not so well prepared. Cigarette shops and brasseries, or inferior liquor shops, abound, and are much frequented. Black coffee is largely partaken of by all classes. Such are the general conditions influencing health in this seaport town, one of Egypt's health-resorts.

The common diseases are typhoid, simple continued and mild intermittent fevers, small-pox, conjunctivitis, diarrhœa, dysentery,

venereal, various skin affections, hepatitis, and abscess of the liver, cholera and the plague at rare intervals. Venereal is very common among both the native and European prostitute class. Judged by observation in our military hospitals, the prevailing type is the soft chancre, often accompanied by buboes, in the warm and relaxing weather slow to heal. Iodoform, carbolic oil, and boracic lint, with supporting treatment, afford the best results with the latter. For the indurated chancre and its sequelæ mercury is given with good effect. Tertiary syphilis is rarely seen.

The following statistics afford some idea of the diseases of the station, and of the work performed by the medical staff of the military hospital at Alexandria from the date of its being opened, February 3rd, 1883, to July 27th, 1888, a little over five years:—

Admitted,	10,779
Died,	164
Invalided for discharge,	95
Invalided for change,	719
Discharged to duty,	9,801

244 officers were treated in hospital, 8 died, and 44 were invalided for change of climate. Mortality to cases treated, all classes, 1·47 per cent. The more important admissions were venereal, 2,779; fevers, 1,683; diarrhœa, 810; cutaneous diseases, 555; dysentery, 441; debility, 365; eye affections, 343; dyspepsia, 209; jaundice, 206, rheumatism, 206; bronchitis, 207; hepatic disease, 142; heart, 124; tonsillitis, 118; phthisis pulmonalis, 51; pneumonia, 49; tænia solium, 31; mental disease, 27; delirium tremens, 22; malignant cholera, 14; sunstroke, 9; scarlet fever, 1. Enteric fever accounted for 84 deaths, 21·37 per cent. of the cases treated; cholera, 11; pneumonia, 10, or 1 in 5; dysentery, 8, or 1·80 per cent. of those treated; hepatic disease, 5; phthisis pulmonalis, 4; heart disease, 2. There were 566 admissions for wounds and injuries.

The varieties of venereal disease were:—

Primary venereal sores,	1,635
Gonorrhœa,	897
Secondary,	247

And of fevers—

Simple continued,	820
Febricula,	239
Enteric,	393
Ague,	196
Remittent,	35

The regiments from Suakim and up Nile imported many cases of fever, dysentery, and rheumatism—men who had undergone much hardship, exposure, and frequent movement, inseparable from military service in the field. Of the very few admissions for small-pox none occurred in 1886 or 1888, and the one under treatment in 1887 was imported. In 1886 the sick of 30 different corps were treated in the hospital; the maximal strength of the garrison was then 3,410; number of beds equipped 415. The dry-earth system was in operation in hospital and barracks, and all enteric stools were disinfected, placed in closed receptacles, and removed beyond reach of danger.

Of these fevers, enteric (endemic in Cairo and Alexandria, and associated, outside barracks, with defective methods of getting rid of the excretions) was the most important and the most fatal, affecting most newly-arrived corps, subject to, for the first time, local morbific influences. The greater majority of those attacked were under twenty-five years of age. The greater heat of the frontier stations added much to the difficulty of treatment, and increased the mortality to, in some cases, 38 per cent. of those attacked. The mortality and liability to attack decreased with service in Egypt. A remarkable example—the 1st Yorkshire regiment, which, on return to Alexandria in 1887, after a sojourn of three years in the country, and exposure at Assuan, had only one admission, and no deaths—pointing to acclimatisation as a preventive. Medical officers have noted the frequency with which the large gut was affected, and the prevalence of dysenteric symptoms following upon or mixed up with those proper to typhoid.

They have classed the ætiology of cases occurring up Nile under various heads:—(*a*) Germs carried up river from Cairo—fourteen days to reach the first cataract at Assuan. Some of the patients being found in the second week of the fever on arrival, with rose spots; (*b*) comparative youth of the soldiers; (*c*) foul drinking water from the Nile, which was used as a latrine by natives on the banks, for washing purposes, making gingerpop and lemonade sold to soldiers, the latter not making use of boiled and filtered water; (*d*) typhoid stools passed into Nile; (*e*) troops following the banks where soil was freely impregnated with feculent matter; (*f*) difficulty of personal cleanliness on service; (*g*) monotony of diet; (*h*) badly cooked food; (*i*) fatigue and anxiety of mind, with depression; (*j*) rapid changes of temperature, great heat in

Centigrade Temperature
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Mean Humidity
Approximate Mean Temperature
Continued Fevers and Dysentery
Cold and occasional Rain
Season of occasional Hot Winds
Season of damp northerly Winds
Cold and occasional Rain
58·5
64·9
60·6
61·6
68·7
70·8
71·2
72·5
68·5
72·7
63·0
64·5
13·3
15·8
18·6
19·2
20·6
23·1
25·7
26·1
25·7
25·8
19·3
16·3
5
2
2
3
3
8
15
21
25
32
31
11

day, cold wind at night; (*k*) impure milk. The onset was found to be often very invidious; diarrhœa by no means constant, 1 in 10 or more constipated, and in one-third no rose spots. Hypostatic congestion of back part of lung a frequent complication, increasing head symptoms, with increasing heat. Epistaxis not of frequent occurrence; and hæmorrhage from the bowel, when present, a grave symptom. Relapses proper, not common, but recrudescences frequent. The mortality would have not been so high had all doubtful cases of continued fever, diarrhœa, or febricula of over twenty days' duration been included. In the hospital at Alexandria the mortality of simple continued and enteric fever combined was 7 per cent.; the mortality for all forms treated—viz., 1,683—was 5 per cent.

The temperature chart of 393 cases diagnosticated as enteric showed considerable variety, but may be grouped under six heads:—(1) Abortive cases reaching to normal on fourteenth day. (2) Fevers of twenty-one days' duration. (3) Fevers of thirty-one days' duration. (4) Marked vacillations or remissions from commencement to close. (5) Irregular temperature. (6) High temperature prolonged by recrudescences. The second and third were more or less typical charts.

Beyond the fact of there being a greater frequency of dysenteric lesions the *post mortem* appearances were similar to what has been observed in India and other tropical and semi-tropical countries. The mesenteric glands were always enlarged and softened; the spleen was more or less enlarged, softened and congested, and full of dark fluid blood; the small intestine was congested, principally at its lower end, with Peyer's glands in various stages of infiltration and ulceration. The diseased solitary glands were sometimes the more prominent lesion. The ulceration was generally most marked at the ileo-cæcal valve. The condition of the large intestine varied. The specific lesions of enteric fever were therefore well marked. A mixed treatment—mineral acids and quinine, symptomatic, antifebrin, aconite, antipyretic mixtures, digitalis, occasional baths, tepid or cold sponging, the ice cap, cooling drinks, milk, concentrated beef or chicken tea, milk and soda water, and the recognised treatment of complications. During convalescence a gradual approach to more solid food; alcoholic stimulants when indications of failing heart were present.

Of thirty cases treated in 1888 the following were the more interesting particulars:—

Age—completed	18	years	-	1
„	19	„	-	2
„	20	„	-	5
„	21	„	-	5
„	22	„	-	5
„	23	„	-	5
„	24	„	-	2
„	26	„ and upwards		5

Under twenty-five years 25

Service in Egypt—

Under	1	year -	28
„	2	„ -	2

Days under treatment of recovered cases—

30 and under		35	-	2
35	„	40	-	1
40	„	45	-	3
50	„	55	-	3
55	„	60	-	1
60	„	70	-	6
70	„	80	-	4
80	„	90	-	3
92 days		-	-	1
139 „		-	-	1

Duration of fatal cases—15, 40, 32, 16, 11, 17 and 9 days.

Average duration of cases—56·2 days in hospital.

Temperature on admission—

100° and under		101°	Fahr.	2
101°	„	102°	„ -	5
102°	„	103°	„ -	4
103°	„	104°	„ -	12
104°	„	105°	„ -	6
105·2°	-	-	-	1

Maximal temperature reached—

102° and under		103°	-	2
103°	„	104°	-	3
104°	„	105°	-	14
105°	„	106°	-	11

The relapses with an intervening apyrexical period, 3; recrudescences, 7. Eruption in five cases very profuse, on abdomen

especially; about a third of other cases not observed. In six cases only did the temperature continue above normal beyond the 31st day—viz., to the 33rd, 36th, 41st, 44th, 48th, and 68th day. In 5 the symptoms abated about the end of a fortnight. All the patients returned to duty in Egypt except one invalided for change to England for debility after a stay in hospital of 139 days.

Among those who recovered, dysentery occurred during convalescence in two, bronchitis in one, and debility in another.

Fatal cases—(1.) Age twenty-two; service four years; in Egypt two months; in hospital fifteen days. Temperature on admission 103·2°, maximum, 105°; eruption doubtful; tongue dry and furred; much diarrhœa in first week; considerable hæmorrhage; much abdominal tenderness; high temperature not influenced by antipyretics (antifebrin, &c.). *Post mortem*—Lower end of ileum ulcerated; perforation; mesenteric glands enlarged; spleen 24 ozs.; large intestine congested.

(2.) Age eighteen; service three years; in Egypt seven months; in hospital 40 days. Temperature on admission, 104·2°; maximal temperature, 105°; no diarrhœa; chest symptoms; hæmorrhage from bowels. *Post mortem*—Small intestine full of blood clots; congested; glands enlarged; solitary glands of large intestine ulcerated and punched out; spleen enlarged 18 ozs.; lungs congested.

(3.) Age twenty-six; service eight years; in Egypt eight months; in hospital thirty-two days. Temperature on admission, 101°; maximal temperature, 105°; loose motions, followed by profuse diarrhœa; base of left lung congested; considerable hæmorrhage. *Post mortem*—Spleen enlarged, softened 8 ozs.; fourteen ulcerated patches in ileum; solitary glands enlarged; perforation in two ulcers.

(4.) Age twenty-one; service three years; in Egypt ten months; in hospital eleven days. Temperature on admission, 102°; maximal temperature, 105°; diarrhœa; motions light yellow; no abdominal pain or tenderness. *Post mortem*—Lungs somewhat congested; spleen 6½ ozs.; three ulcers in small intestine, one perforated; glands enlarged; large intestine congested, indurated, pigmented.

(5.) Age twenty-one; service two years; in Egypt eleven months; in hospital seventeen days. Temperature on admission, 103·4°; maximal temperature, 105°; violent headache; delirium on admission; tongue dry and hard; much diarrhœa later on.

Post mortem—Brain congested, much effusion of serum on surface; lungs congested; spleen softened, 7½ ozs.; sixteen ulcers in ileum; six patches of livid congestion in large intestine.

(6.) Age twenty-one; service three years; in Egypt eleven months; in hospital nine days. Temperature on admission, 104·4°; maximal temperature, 105°; tongue furred; no abdominal pain. *Post mortem*—Lungs congested; spleen enlarged; softened, 19 ozs.; Peyer's patches enlarged; twenty three ulcers in various stages in small intestine, one perforated; large intestine much congested.

The very serious complications in these cases were hæmorrhage, perforation, or brain congestion, and effusion.

With regard to treatment, we have yet to find a specific for this fever. I think it may be regarded as an established fact, now, that high temperature, minus infection, does not produce that serious degeneration formerly attributed to it, and that we must seek in the infection process and the ptomaïn intoxication resulting from it, those deleterious effects upon the vital organs which undermine the system and eventually cause death in enteric fever, pure antipyretic medicines reduce the temperature, but do not stimulate the nervous system, do not relieve the delirium, or increase the flow of urine. In a serious fever of specific origin they have no permanent effect, except when malaria complicates the disease where quinine is useful. Viney has confirmed Vogel's observations that after cold baths have reduced the fever there has been a rapid increase of weight. Cold so applied being a true afebrile remedy, while antipyretics are simply antithermic. It is still held by very high authorities that the cold bath treatment combats best the effect of the infective and toxic agencies, the reflex stimulus aroused by the shock to the peripheral nerve endings reacting on the nerve-centres which furnish innervation for circulation, respiration, digestion, tissue formation, and excretion, that the system is enabled to tide over the dangers which would come from failure of those functions—the simple cooling effect on the blood occupying a secondary though not unimportant office. In tropical and semi-tropical countries where the system is already enervated by constant heat, this treatment, when circumstances admit of its being systematically adopted, should prove the most beneficial and the nearest approach to a specific for typhoid, and reduce the mortality from 21·7 per cent.—that of 11,124 cases collected by Brand and treated on the expectant method—to 3 or 4 per cent. That

this is possible the following statistics quoted by Vogel appear to prove, in a temperate climate :—

Source	Treatment	Number of Cases	Per-centage of Mortality
Military Hospital, Munich, 1841–68 - - -	Expectant - -	5,488	20·7
1868-71 - - -	Intermediate, with water	2,841	12·2
1875–81 - - -	Baths and antipyretics -	702	7·6
1880 - - -	Strict cold baths -	428	2·7
1882–87 - - -	Ditto - - -	141	3·5

while the result of cases treated before the fifth day are even more satisfactory.

ART. III.—*Note on an Outbreak of Pneumonia at Tulla, Co. Clare.* By JAMES MOLONY, F.R.C.S.I., L.K.Q.C.P.; Medical Officer, Tulla Workhouse and Dispensary District; late President of the Irish Medical Association.

DURING the many years I have been in practice I have never known pneumonia to prevail to the same extent that it did in this neighbourhood last winter and spring. On the whole, the mortality has been very small, taking into account the numbers attacked. There was no death, I may say, unless the patient, not recognising the formidable nature of his illness, tried to battle against it for some days without treatment, and remained out of bed, thinking he was suffering only from an ordinary cold. In the majority of cases I have met with, where the temperature was not very high, little treatment was required beyond confining the patient to bed and using hot poultices. In any case where the temperature was 104° or 105°, or higher, a few doses of quinine reduced the temperature, and lowered the fever—the number of respirations lessening, but not so quickly as the temperature lowered. The frequency of the pulse was the last to give way. In a few cases the quinine caused deafness and singing in the ears, when the use of it had to be given up for a while. I found 5-grain doses, repeated as occasion required, answered its purpose quite as well, and more safely than larger doses.

As to the infectiousness of pneumonia, I have no doubt whatever that it is just as communicable as typhus or scarlatina, with this difference, that a person nursing or attending a pneumonic patient will not take the disease; but if a person sleeps in the same bed, as sometimes occurs from ignorance of the danger of doing so, such person will seldom or never escape.

The firse case I met with during the recent epidemic was that of a farmer who had been six days ill before I saw him. He had double pneumonia, with a temperature of 107°, extensive dulness on percussion, hurried breathing, 52, and pulse 130. I had no hope of his recovery, and he died on the 10th day of his illness. At my first visit I asked the man's wife if she continued to sleep in the same bed as her husband, and found that she did. I warned her of the danger, but it was too late, as on the day of her husband's funeral the woman had rigors. I saw her next day, and she was very ill in pneumonia. She recovered, though her case was an exceedingly serious one. Since then I have met other cases of infection, but in no instance did I meet a case where the disease was communicated except to a person sleeping in the same bed as the person first attacked.

How long it took to recognise phthisis as infectious! If two sisters slept together, or two brothers, and one of them had a cough which developed into phthisis, the second in some time was attacked with the same train of symptoms, and the idea was that it was a family predisposition to consumption; "that it was in the blood." When, however, many instances occurred where a phthisical husband or wife communicated the disease to his or her married partner (there being no blood relationship), practitioners realised the danger of continuing to sleep with a person affected with phthisis. I think this was recognised by intelligent medical men from their own observation long before it made its way into the literature of the profession.

To return to pneumonia. It would be a very serious mistake to suppose that there are two kinds of pneumonia—infectious and non-infectious. It is altogether a question of propinquity, and any one sleeping in the same bed with a pneumonic patient, and breathing the tainted air expired by him, will be almost certain to catch the disease. It is safer to recognise this fact than to fall back upon the theory that in every case of infection there was a specific fever present which was absent in other cases where the disease had not been communicated to any one.

I suppose some will account for the apparent infectiousness of my cases by saying that it was merely epidemic influences that caused the second person to be attacked in those instances I have referred to. But I would ask any one adopting that theory why did epidemic influence fail in conveying the disease except to some one who slept in the same bed with the sick person?

EHRLICH'S DIAGNOSTIC SIGN OF ENTERIC FEVER.

In 1882 Dr. Ehrlich announced the fact that the urine of patients suffering from typhoid fever gives a reaction with one of the anilin derivatives, different from that of normal urine, and from the reaction of patients suffering from other diseases. His test solutions are as follows:—A, a saturated solution of sulphuretic acid in dilute (1 in 20) hydrochloric acid; B, a 5 per cent. solution of sodic nitrite in distilled water. In using the test, about 25 parts of A are added to one of B. Mix with this an equal bulk of the urine to be examined, and render alkaline with strong ammonia. This produces, if the case is one of enteric fever, a red solution. Dr. Howard Taylor (*Lancet*, May 4, 1889) writes the reaction "is not always found until the end of the first week," and ceases when the temperature falls to normal, and he further adds, "in exceptional cases the reaction is given in other diseases." We fail to see the peculiar advantages of a diagnostic sign which has so many limitations.

RETENTION OF PLACENTA.

Dr. Pruffet (*La Province Médicale*) records a case of retention of the placenta for three days; suddenly, however, the uterus expelled the afterbirth, and the temperature, which was 41° C., became normal, and the woman made a good recovery—(*Lancet*, May 4, 1889). Dr. John Burns ("Principles of Midwifery," 7th ed., p. 486) records a case of retention of the placenta, in which, on the twelfth day, an attempt at its removal produced inversion of the womb; nevertheless, a good recovery appears to have resulted.

SACCHARIN.

A correspondent, writing to the *Lancet* (May 4, 1889), draws attention the fact that fungoid growths were developed in three weeks' time in a solution of saccharin. Saccharin being one of the aromatic series, is usually credited with being an antiseptic agent, and the fungoid growths can be accounted for only by its being decomposed in weak solutions, as is acetic acid.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

MYXŒDEMA.

Report of a Committee of the Clinical Society of London, nominated December 14, 1883, *to Investigate the Subject of Myxœdema.* London: Longmans, Green, & Co. 1888. Pp. 215.

This exhaustive and admirably-arranged report consists of six sections. Following a short introduction we have, firstly, a historical summary; secondly, an analysis of the symptoms; thirdly, a pathological report by a sub-committee; fourthly, a report of chemical investigations of the tissues and organs from cases of myxœdema in men and animals by Dr. Halliburton; fifthly, a report of experimental researches into the function and pathology of the thyroid gland by Mr. Victor Horsley; sixthly, a report on the results of total and partial extirpation of the goitrous thyroid gland in man by Dr. Felix Semon. Fiually, a general summary by the Chairman, Dr. Ord, and the general conclusions of the whole Committee. Appended to the report are an investigation on the weight of the thyroid body at different periods of life and in persons dying from various causes, by Dr. Stephen Mackenzie, a very complete bibliography of myxœdema, and a large number of tables giving the particulars of 109 cases of the disease.

The Committee find that myxœdema is a well-defined and easily recognisable disease. Besides the well-known symptoms of swelling, dryness and roughness of the skin, the loss of hair, swelling of mucous membranes, loss of teeth, the changes in the voice, the mental failure, the defective co-ordination, the subnormal temperature, the aggravation of all symptoms during cold weather, and the diminution or absence of the thyroid gland, they call attention to the frequency of delusions and hallucinations which occurred in nearly half the cases, generally when in an advanced stage, and to the insanity which occurred in nearly the same proportion of cases, taking the form of acute or chronic mania, dementia, or melancholia, with well-marked predominance of suspicion

and self-accusation. Tremors and contractions of hands and feet, similar to those which were observed in monkeys after removal of the thyroid, were noticed in some cases. Moles and warts on the skin were frequently noted, and in several cases the swelling of the skin in the early stages was localised, affecting first the head and face, then the lower extremities, and lastly the upper extremities. Hæmorrhages were also found to be more frequent than was at first suspected. The bleeding occurred from the uterus in parturition, nose, gums, teeth, and bowels. Women are affected more frequently than men in the proportion of 6 to 1. The disease may occur in youth, or not till old age, but is most common in middle life.

Nothing decisive is known as to the causation of myxœdema. In some cases heredity has appeared to play some part, as several members of the same family have been affected, and transmission from father and mother to children has been observed. In a few cases the disease has been preceded by exophthalmic goitre, and the diminution in bulk of the thyroid gland to a size below normal has coincided with the appearance of the myxœdematous symptoms. No abnormality of the sexual function has explained the greater frequency of the disease in the female sex. It is known that alterations in the vascularity of the thyroid body accompany menstruation and pregnancy, and are not known to have any parallel in man. "It is possible that the more frequent occurrence of myxœdema in the female sex may depend on the fact that the thyroid gland being functionally more active than in the male, is thereby more apt to be attacked by destructive degenerative changes." In one case, after the appearance of all the symptoms of myxœdema, the swelling disappeared each time the patient became pregnant (three times in seven years), and reappeared after the birth of each child. The swelling of myxœdema is, however, a fluctuating symptom, and varies under the influence of many circumstances. Death usually occurs by some intercurrent affection, generally of the lungs, but sometimes is due to the disease itself, and takes place by general or nervous exhaustion.

In many cases periods of improvement have been noticed, and in one case recovery is said to have occurred. Warmth has a decidedly beneficial effect, while exposure to cold aggravates all the symptoms. Jaborandi or pilocarpin and nitroglycerine have been of service in some cases, while iron, quinine, and the hypophosphites have proved temporarily useful.

The cause of the disease is attributed in the report on its pathology to a destructive affection of the thyroid gland. The organ was found to be diminished in size, of a pale yellow colour, and its glandular structure was replaced by fine fibrous tissue. "The morbid condition seems to begin as a small-celled infiltration of the walls of the vesicles, and this is accompanied or soon followed by epithelial proliferation in the vesicles themselves. In a more advanced stage the gland becomes converted into a delicate fibrous tissue, in which clumps of small round cells, clearly the remains of the vesicles, are scattered. In the last stage the gland structure is replaced by fibrous tissue, in which small islets of round cells are sparsely placed."

Other pathological changes are found in the skin, in which nuclear hyperplasia and increase of connective tissue occur, chiefly about the hair follicles and the sudoriparous and sebaceous glands. The interspaces between the fibrous bundles are widened as by œdema, but Dr. Ord maintains that this œdema-like condition is not due to ordinary serous fluid but to some substance which does not flow out when the tissue is cut, and which has consequently a gelatinous consistence.

The falling out of the hair is attributed to the changes in the skin, and the decay and loss of teeth to similar changes in the mucous membrane of the mouth. The increased bulk of the body was found to be due to overgrowth of subcutaneous fat. No important changes are found in the nervous system. The interstitial changes in the skin and viscera seemed to be of an inflammatory character and to have nothing specific in their nature.

The chemical examination of the tissues was made by Dr. Halliburton, who did not find the great increase of mucin noticed by Dr. Charles in the first case of Dr. Ord. This is attributed to the circumstance that most of the patients died, not in the swollen myxœdematous stage, but in the later atrophic condition. In some cases the subcutaneous connective tissue was replaced by fat, and frequently the tissues had lain so long in spirit before they were examined that the extraction of the mucin was difficult and imperfect. The small increase of mucin which was found is attributed to the increase of the ground substance of the connective tissue.

Perhaps the most interesting part of the report is the experimental investigation undertaken by Mr. Victor Horsley on the effects of removal of the thyroid gland in animals. The great importance of the gland in young growing animals is universally

admitted, and its atrophy in old age—a condition which somewhat resembles the myxœdematous state.

In rodent animals removal of the thyroid does not cause any symptoms, but in carnivora is almost invariably followed, within a period ranging from a few days to two or three months, by death, preceded by symptoms of myxœdematous cachexia. The symptoms are dulness and apathy, fibrillar twitchings in the muscles, giving rise to violent clonic convulsions. These are accompanied by dyspnœa and gradually deepening coma. Paralysis of the muscles of the limbs and disturbance of nutrition occur, the temperature becomes subnormal, the red blood corpuscles are diminished, the white increased.

A very remarkable instance of the occurrence of myxœdema, due to cold, is recorded. A sheep whose thyroid was extirpated, recovered and lived in good health for a year and eight months. It was then accidentally exposed to cold after having been shorn, when "the animal was observed to become ill, it lost its appetite, then exhibited the usual symptoms of the acute cachexia—viz., the spasms, paralysis, coma, anæsthesia, tetanoid contracture, and fall of temperature to 25° C. Death occurred about a fortnight after the supervention of these symptoms, and 569 days after the operation. After death mucinous infiltration of the subcutaneous tissue was found. This case is important in showing the influence of external temperature on the course of myxœdema—a circumstance clearly shown also in cases of the disease in the human subject; also as showing that the disease is due to loss of the thyroid and not to injury to neighbouring structures as the nerves or trachea.

In monkeys, after extirpation of the thyroid, the symptoms sometimes come on rapidly, and the disease runs an acute course; in other instances the course of the cachexia is much slower, and the symptoms are those of a chronic disease. Acute myxœdema is more apt to occur in young animals, and is distinctly induced by exposure to cold. The following are the symptoms:—"*Motion*, tremor, clonic spasms (paroxysmal), contracture, paresis, paralysis. *Sensation*, paræsthesia, then anæsthesia. *Reflexes* gradually diminished. *Mental operations*, normal at first, are soon diminished in activity, and then follow apathy, lethargy, coma." There are also fall of temperature after a temporary fever, anæmia, leucocytosis, fall of blood pressure, mucinous degeneration of connective tissue, the eyelids are puffy with elastic œdema, the features are coarse

and heavy, the skin is rough, the hairs fall out, the spleen is sometimes enlarged, the urine is free from albumen.

If after the operation the monkeys are well cared for and kept at a temperature of 90° F., acute myxœdema is averted, life is prolonged from an average of 24 in the acute cachexia to 125 days, and the characters of the symptoms are remarkably changed. "Mucinous degeneration was replaced by marasmus, and mental disturbance became the most prominent feature among the special symptoms. The animals in all the cases resembled cretins in every particular. It seemed as if they had been enabled to pass through (1) a neurotic and (2) a myxœdematous stage into (3) a marasmic and cretinic one." In these animals "*post mortem* examination failed to show the mucinous degeneration noted in acute experimental myxœdema, but on the other hand revealed rather fibroid cirrhotic changes in the tissues."

From his experiments Mr. Horsley concludes that the loss of the thyroid gland is the cause of the symptoms, and that myxœdema, as it occurs in the human subject, is due to the same cause, "that some as yet unknown condition (possibly of the central nervous system) causes atrophy of the thyroid gland, and consequent upon this are developed the symptoms of cachexia known in its various forms as myxœdema, cretinism, and cachexia strumipriva."

In the chemical analysis of the animals operated on a great increase in the percentage of mucin was found in the skin, tendon, salivary glands (parotid, in which there is normally no mucin), and in the blood and urine. In the chronic cases this excess of mucin was not found.

A report of the results which followed total and partial extirpation of the goitrous thyroid gland in man is made by Dr. Felix Semon. He has communicated with all the surgeons who have been known to have performed such operations, and has obtained 69 replies, of which 64 could be utilised. "The evidence as to the occurrence of anything like myxœdema after the operation is various and conflicting." Many patients die shortly after the operation, others are for different reasons not observed for a sufficiently long time to allow of the supervention of symptoms of myxœdema. Accessory thyroid glands are probably present in some instances, in others the recurrence of the tumour showed that the operation was not complete. A table is given in which 408 cases of supposed total removal of the thyroid are recorded.

Of these 59 died in consequence of or shortly after the operation, and in 20 the operation was performed for malignant disease. Deducting these and the cases which were lost sight of shortly after the operation, there remain 298 cases in which total thyroidectomy was performed for simple goitre, and in which the patients are known to have recovered. "Of these, in 277 instances the further fate of the patients could be followed up, with the result that in 22 cases in which the patients remained, or at any rate got well, either recurrence of goitre or development of accessory thyroid glands appears to have taken place; that in 186 cases the patients appear to have remained free from cachexia strumipriva without recurrence or development of accessory thyroids having taken place; and that in 69 cachexia strumipriva of a more or less severe type developed." Of these 69 cases the sex was recorded in 57, showing 24 males and 33 females. The preponderance of the female sex met with in primary myxœdema is, therefore, not observed when the disease follows thyroidectomy. While no age is exempt, the most of the cases are between ten and thirty years, showing that the risk of cachexia developing is greater in individuals whose physical development is not yet entirely terminated. Since the proportion of cases in which myxœdema followed complete removal of the thyroid gland is only 1 in 3, Dr. Semon concludes that the hypothesis of a connection between the removal of the gland and the cachexia cannot be maintained. He discusses the different causes which have been assigned for the occasional sequence of the cachexia, such as atrophy of trachea, injury to nerves, mode of operation, and endemic influence, and shows that they are all unsatisfactory.

The following are the remarks of Dr. Ord on this part of the report, which concludes his admirable general summary from which we have so largely quoted:—

"When Dr. Semon, in his fairness, finally refuses to answer definitely the question, 'What is the cause of cachexia strumipriva?' the Committee thinks that he might have gone a little too far in his endeavours at being perfectly impartial, and that, in this connection, attention should be drawn to the fact mentioned by himself—viz., that the peculiar cachexia has not followed any other serious operation in the neck involving the great vessels and the sympathetic nerve. What applies to operations applies also to disease. The positive fact of the sequence occurring in one form only of operation among many having similar associations takes a first position. It is the explanation of the non-

occurrence of myxœdema in operative cases which has to be sought, not the justification of the clearly-established fact that myxœdema follows one operation and no other.

"Finally, it may be stated that there is strong evidence that myxœdema, sporadic cretinism, endemic cretinism, cachexia strumipriva, and the operative myxœdema of animals are severally species of one genus; that such clinical differences as exist between them are due to causes already set forth; and that the one pathological fact common to all these conditions is the occurrence of morbid processes or of operations involving the annihilation of the function of the thyroid body."

Notwithstanding this admirable report, which, in our opinion, fully justifies the conclusions arrived at by the Committee, the questions with which it deals are as yet far from being settled. Thus Langendorff, in noticing recent works by Munk and Drobnick on extirpation of the thyroid body in animals, states his belief that the thyroid gland question has attained a satisfactory settlement. The morbid symptoms which follow the operation are always secondary, and are due to irritation of the nerves caused either by the operation itself or by the process of healing; that the thyroid body cannot be considered as an organ essential to the life of the animal, and that for physiologists the extirpation question has lost all interest as bearing on the explanation of the function of the organ—(*Ctblt. f. klin. Medicin*, 1889, s. 45).

Lectures on Bright's Disease. By Robert Saundby, M.D. Edin.; F.R.C.P., London; Emeritus Senior President of the Royal Medical Society, etc., etc. With fifty illustrations. Bristol: John Wright & Co. London: Hamilton, Adams & Co., Paternoster-row. 1889. 8vo. Pp. 290.

In this work Dr. Saundby has made an original and most valuable contribution to the literature of kidney diseases. As he tells us in the preface, his work is based on thirteen years' clinical and pathological study of Bright's Disease, and he has endeavoured, in our opinion with no little success, to explain "within a modest compass the present state of contemporary knowledge" of the subject. We are not told where these "Lectures" were delivered, nor does the term appear, except on the title-page and at the head of the first chapter. In the table of contents and throughout the book, its place is taken by the word "chapter." There are three sections. The first is devoted to the general pathology of kidney

disease; the second, to the clinical examination of the urine in health and disease; and the third, to "Bright's Disease." Seven chapters are included in the first section. They treat, respectively, of albuminuria, the pathology of dropsy, the pathological relations of tube casts, cardio-vascular changes in kidney disease, the pathology of polyuria, that of uræmia, and retinal changes in Bright's disease.

Section II. consists of only one chapter—the eighth—on the clinical examination of the urine. It extends over fifty pages and is singularly clear, and at the same time comprehensive.

The third and last section is devoted to the consideration of Bright's disease. This part of the work consists of seven chapters—one on the history, classification, and ætiology of the disease; a second on the general anatomy of the kidney; and others on febrile nephritis, lithæmic nephritis, obstructive nephritis, the complications of chronic Bright's disease, and the treatment of lithæmic nephritis. It will be noticed that the author has had the courage to propose a new classification of Bright's disease. It is based upon ætiological considerations, and Dr. Saundby expresses a hope that it will be found to adapt itself to the facts of clinical observation as well as to pathology. The following are the proposed divisions:—

(1.) Febrile nephritis; (2) toxæmic nephritis; and (3) obstructive nephritis. We shall give the author's own discription of these three groups of inflammatory kidney disease:—

"The first division includes all those cases of acute or chronic nephritis occurring as a result of acute or chronic febrile diseases. The nephritis is directly dependent upon the fever process, hence its name. Pathologically it includes most cases of acute parenchymatous nephritis and of chronic fatty kidney.

"The second division includes the great group of chronic Bright's disease due to lithæmia, and is specially associated with the small red granular kidney. It probably depends upon irritation of the kidneys by the excessive elimination of poisons, of which uric acid is the type. It includes the acute nephritis of acute gout, of poisoning by animal, vegetable, or mineral poisons, and certain cases of primary acute nephritis usually attributed to chill, but in which there is probably an already existing dyscrasia. Such cases are met with occasionally in individuals who get drunk on beer and lie out all night.

"The third division includes all cases dependent upon obstruction to the outflow of urine. They occur commonly in males as a consequence

of stricture or enlarged prostate; in females from pressure on the ureters caused by pregnancy or pelvic diseases.

"In each of these classes we may meet with the urinary and other symptoms of acute or chronic nephritis, while the *post-mortem* appearances may be those of acute nephritis, of chronic fatty kidney, or of contracting kidney." (Pages 151, 152).

Febrile nephritis is further sub-divided into acute and chronic. "Gouty kidney" is used as a synonym of lithæmic nephritis, and the synonyms for obstructive nephritis are—"surgical kidney," "puerperal kidney," and, best of all, "ascending nephritis."

Dr. Saundby explains that lardaceous or waxy degeneration is not made a special group, because it is only when associated with chronic nephritis that it deserves to be called "Bright's disease." He adds:—

"The lardaceous kidney of most authors is chronic nephritis, as it occurs in chronic pyrexial diseases—*e.g.*, long standing suppurations, phthisis, &c., in which lardaceous degeneration may occur just as it may in any form of chronic Bright's disease. Its relation to suppuration is by no means so constant as has been taught, for out of sixteen cases of chronic nephritis occurring in these circumstances, collected from the pathological registers of the General Hospital, Birmingham, lardaceous degeneration was present in two only." (Page 152.)

So far as an ætiological classification goes, that proposed by Dr. Saundby seems to be at once scientific and sufficiently comprehensive. It appears to us, however, that the term "toxæmic" would be more fitting than "lithæmic" in the heading to the excellent chapter on treatment (XV.). The consideration which probably weighed with the author in using the latter term was (to quote a foot-note on page 199) that "the other toxæmic nephritides are of too little clinical importance to call for description." This foot-note is inserted at page 199 to account for the use of the term "Lithæmic Nephritis (syn. Gouty Kidney)" at the head of Chapter XII.

Seldom has it fallen to our lot to review a work in which there is so little to criticise adversely. Here and there we observe a mannerism, as when in Chapter XV. he says "we should be careful to do nothing that will *worsen* his (the patient's) condition." At the same time, there is, of course, no etymological fault here, and the verb "worsen" has a grand old Anglo-Saxon ring about it that we like.

Dr. Saundby's style is admirably clear and terse. The author attracts his reader's attention at the outset, and holds it throughout by the peculiar fascination with which he invests his subject—a fascination, the result of a happy combination of original research with an intelligent study of contemporary literature on kidney disease in many languages. And this leads us to notice a very valuable feature in the book—namely, the bibliography with which each chapter closes. By means of this, the abuse of footnotes is avoided, and reference is given to the leading authorities on all important points connected with kidney disease.

We trust the author will bear with us for saying that several of the fifty illustrations in his work are not worthy of it. We allude more particularly to the drawings of urinary deposits indented in the text in Chapter VIII. These would be much more effective were they brought into two or three plates in the next edition, to the early appearance of which we look forward with confidence.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. BATTY TUKE, M.D., and G. SIMS WOODHEAD, M.D. Vol. I. Edinburgh and London: Young J. Pentland. 1889. Pp. 212.

THIS volume contains the first fruits from the new research laboratory which has been recently established by the Scottish College of Physicians. The number and value of the results obtained during the first year are most encouraging, and, as the editors modestly put it, go far to justify the establishment of the institution.

There are eleven papers in the volume. First, is a description of the laboratory and of the apparatus, by the superintendent, Dr. Woodhead. The description is illustrated by numerous engravings, showing the arrangement of the different rooms and the construction of some pieces of apparatus which have been designed or altered specially for the laboratory.

The second paper, by Dr. D. Berry Hart and Mr. J. T. Carter, jun., gives a description of "Two Cases of Advanced Extra-uterine Gestation," studied by the method of frozen sections. From the examination of the specimens the following deductions are drawn:—

"1. Fallopian-tube pregnancy may develop into the broad ligament (intra-ligamentous, Werth), and continue this development beneath the peritoneum of the pelvic floor (subperitoneo-pelvic of Dezeimeris).

"2. An advanced gestation may be derived from a Fallopian-tube pregnancy which developes as given in 1, and further lifts up the peritoneum, until we get—

"3. An abdominal case entirely extra-peritoneal. For this form we suggest the term subperitoneo-abdominal.

"4. The placental changes in the subperitoneo-abdominal form are destructive to placental tissue and function, and inimical therefore to vigorous fœtal life.

"5. In treatment, our great principle is to interfere where safest for the mother, without regard to fœtal life.

"6. The placenta should be left after operation, unless it can be ligatured, as separation causes uncontrollable hæmorrhage. This is the usual reason for leaving it untouched, and one that cannot be gainsaid. The extra-peritoneal position of the placenta, and the great chance of its organising, as is shown in our specimen, forms another powerful argument for leaving it alone. In operations for advanced gestation the fœtus only should be removed, the cord tied, returned, and the wound closed, unless a septic condition requires drainage."

This paper is illustrated by three admirably-executed plates.

The next paper, "On the Use of Mercuric Salts in Solution as Antiseptic Surgical Lotions," is by Dr. Woodhead. It was found that the antiseptic action of corrosive sublimate is greatly interfered with by the formation of precipitates with albuminous matter, so that but little of the mercuric salt is left in solution. A number of carefully conducted experiments were made in which solutions of corrosive sublimate, on the one hand, and of mercuric iodide dissolved in potassium iodide, on the other, were mixed with varying quantities of blood, and the amount of mercuric salt remaining in solution determined, as well as the action on the hæmoglobin and on the albumin of the blood. The readiness with which bacteria and moulds grow in the different mixtures was also noted. It is concluded that biniodide of mercury is a safer and more reliable antiseptic than the bichloride, because—

"1. It is not so poisonous, hence the risks of poisoning by absorption are not so great.

"2. It does not form an albuminate, consequently the whole of the salt is available as an antiseptic.

"3. It may be used with either acids (especially vegetable acids) or alkalies, neither of which appear to interfere immediately with its antiseptic properties.

"4. It is not necessary that the solution should be made with distilled water; all that is necessary is a slight excess of iodide of potassium.

"5. The mercury from this solution is not deposited on the surface of the skin or on instruments, or the deposit is exceedingly slight—so slight indeed that it will not injure the most delicate instrument.

"6. The exact strength of the solution is always known, as its properties remain constant."

Solutions of iodide are recommended as a preservative fluid for pathological and other specimens, and either alone or with Müller's fluid is found more reliable than solution of corrosive sublimate.

The fourth paper, by Dr. Berry Hart, is "On the Mechanism of the Separation of the Placenta and Membranes during Labour." At the end of pregnancy the uterus is divided into three parts:— 1. The cervical canal, which never forms part of the uterine cavity proper. 2. The lower uterine segment, extending two inches or so from the os internum, is bounded above by the line of reflexion of the peritoneum, and, corresponding to this line, the part of the uterine wall where the contraction ring and circular vein develop during labour. 3. The uterine musculature, above this. The placenta is normally confined to the third part of the uterus. At the end of the first stage of labour, by the deeper passage of the child's head, the area of the lower uterine segment is increased. The area of the decidua cannot increase in correspondence with that of the uterine wall, to which they are attached, and in consequence of this want of correspondence a rupture takes place through the deeper spongy layer, and so the membranes in this part are separated.

In the upper part of the uterus the conditions are different. The lower uterine segment is passively distended, the uterus above the contraction ring contracts and relaxes actively. From this part the placenta does not separate until after the birth of the child, because prior to this there is no disproportion between it and the uterine wall. At each pain the placenta contracts in area and increases in thickness, the contraction being due largely to the less quantity of blood contained in it, caused by the compression of the curling arteries. As the uterus relaxes the blood again passes into the placenta, and an expansion of the organ takes place. But when the child has been born and breathed the blood is withdrawn from the placenta by the aspiration of the child on the one side, by the compression of the arteries by the contracted uterus on the other. So long as the contraction of the uterus lasts there is no disproportion between the placenta and the part of the uterus to which it is attached, but when relaxation occurs then the

placenta, no longer receiving blood, does not expand, and the disproportion of area necessary to tear through the spongy trabecular layer occurs, and the placenta separates and is soon expelled.

This paper is illustrated by two lithographic plates.

In the fifth paper, "On the Secretion of Lime by Animals," Mr. Irvine and Dr. Woodhead describe experiments made on hens, in order to see whether calcium sulphate could be transformed into calcium carbonate in the animal body. It was found that the quantity of carbonate contained in the shell of the eggs laid during the experiment far exceeded that contained in the food, and that the lime could only have been obtained from the calcium sulphate given with the food. When this was withheld the birds laid either no eggs, or eggs without shells. For the details of the experiments and interesting speculations founded thereon we must refer to the paper itself, which is one of great interest and value.

In the following paper Dr. Alexander Bruce describes "A Case of Absence of the Corpus Callosum in a Human Brain," and collects the cases previously recorded by other writers. The cases are classified according to the stage of development at which the arrest took place. The appearances found are not such as to support the views as to the nature of the corpus callosum recently propounded by Professor Hamilton, of Aberdeen. The paper is illustrated by twelve plates, giving the appearances seen in the different cases recorded in the text.

Dr. Nasmyth's paper, "On the Air of Coal Mines," has been already published in the *British Medical Journal*. It contains many valuable facts, and is the result of considerable labour. It is satisfactory to know that the air in these unfavourable situations is by no means so bad as it might be; in fact it was found to be "wonderfully good." Many valuable practical suggestions are contained in the paper, which will well repay the attention of sanitarians.

Dr. J. W. Martin, in his paper, "On Cystic Disease of the Ovaries," makes the epithelioma of the Graafian follicle play a more important part in the morbid process than is usually done.

Mr. T. Arthur Helm contributes a valuable paper, entitled "Histological Observations on the Muscular Fibre and Connective Tissue of the Uterus during Pregnancy and the Puerperium." He shows that the commonly received idea that the uterus is newly formed after each pregnancy is erroneous. There is no new formation of muscular tissue during pregnancy, nor does the

tissue degenerate after labour. The muscle cells merely increase enormously in size during pregnancy, and again diminish when the process is over :—

"The change in the musculature may be compared to a *wave*. During pregnancy we have the ascent, the diminutive fibres becoming colossal in their dimensions; then the descent of the puerperium, the fibres diminishing again to their previous volume. To support this temporarily augmented musculature, there is a great development of a temporary connective-tissue scaffolding. When the function of this augmented musculature is discharged there is no further need of the support, which is accordingly destroyed and removed."

Besides the history of the muscular and connective-tissue there is a very interesting account of the changes in the vessels. The observations were made on rabbits, and the results are compared with those which have been obtained from examination of the human uterus. The paper is illustrated by a good plate.

The tenth paper is "An Abstract of the Results of an Enquiry into the Causation of Asiatic Cholera," by Dr. Macleod and Mr. Miller. The clinical and bacteriological part of the research was made at Shanghai; the experiments on animals were made partly in the Edinburgh laboratory, but, owing to the vexatious interference of the Vivisection Act, had to be completed in Berlin. The authors find that the comma bacillus of Koch is invariably present in the intestine in Asiatic cholera, while it is absent in other diseases and in health. Pure cultures of the bacillus introduced into the stomach of the guinea-pig are pathogenic, if precautions are taken to lessen peristalsis, so as to allow time for the multiplication of the organism in the intestine. Introduction of the contents of the ileum of animals killed by the introduction of the pure cultures is equally fatal. This fatality is not caused by the operation, but by the bacillus. In the small intestine of the animal the bacilli multiply, and are associated with changes similar to those seen in men dead of cholera :—

"As there are conditions which favour the passage alive of the bacillus through the stomach of the guinea-pig, and also conditions which favour its multiplication in the small intestine of that animal; so, in man, as there cannot be a doubt that the organism finds conditions favourable to its multiplication in his small intestine, it must have found conditions favourable to its entrance alive through, in all probability, the mouth and stomach. There is strong evidence, therefore, for regarding the comma bacillus of Koch as the cause of Asiatic cholera."

The last paper is an abstract by Dr. Woodhead of his lectures on "Tabes Mesenterica and Pulmonary Tuberculosis." The points chiefly dwelt on are the great frequency of primary tuberculosis of the mesenteric glands in early life, and its probable causation by the use of milk from tuberculous cows. The necessity of a stricter supervision of milk supply than exists at present, and a much closer examination of cows so as to detect the presence of tubercular disease of the mammary gland—a condition often extremely difficult to diagnosticate. The great influence exerted on a tubercular infection by the condition of the mucous surfaces and the vitality of the tissues of the infected body. The bacilli can penetrate only through a diseased or enfeebled epithelium, and can flourish only if they get the better of the cells of the tissue. In many cases they are overcome in the struggle, and consequently a cure of tuberculosis is now a well-established possibility. Besides these points the paper is full of interest, and in the highest degree worthy of the attention of every pathologist and physician.

From this brief abstract of the papers contained in the volume before us, our readers will be able to form an idea of the splendid work done by the laboratory during the first year of its existence, and we have no doubt that this is only a foretaste of much greater things to follow. The difficulties in the way of carrying on original research in laboratories whose main function is that of teaching large classes of students is very great, and it is only by the establishment of such laboratories as that in Edinburgh that good results are to be looked for. It is to be hoped that even in Dublin, where our University and Colleges have hitherto shown themselves so little inclined to encourage scientific work, we may, before long, have a research laboratory, where, we doubt not. that good work would be done, which would help to redeem our school from the backward condition in which it now is.

Ueber Wirkung, therapeutischen Werth und Gebrauch des neuen Karlsbader Quellsalzes, nebst dessen Beziehung zum Karlsbader Thermalwasser. Von Dr. W. Jaworski. Pp. 33.

This work, reprinted from the *Wiener medizinische Wochenschrift*, details a number of experiments on the action of the product sold under the title of "Natürliches Karlsbader Quellsalz." This consists of sodium sulphate, 43·25 per cent.; sodium bicarbonate,

36·29 per cent.; sodium chloride, 16·81 per cent.; potassium sulphate, 3·06 per cent.; with traces of lithium carbonate, sodium fluoride, sodium borate, silicic acid, and oxide of iron.

It is found to act as a purgative, and the character of the purgation and the rules to be observed in order to obtain the best results are given at great length.

It acts also on the stomach, exciting its secretion, and favouring its movements when suitably administered.

The cases in which it should be given, and those circumstances under which it is useful as enema, or for washing out the stomach, are fully set forth. In fact, whoever wants to know all the uses to which this substance can be applied in medical practice will find all the information he can require in this paper.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Nineteenth Annual Session, held at Baltimore, Md., April, 1888. Pp. 250.

This volume contains, besides minutes of the meeting, list of members, &c., the President's Address, an Annual Address, eight Reports of Sections, and five papers. The President chose for his subject one of the most practically important questions of present and pressing medical politics—the great and growing abuse of medical charities. The quality of mercy as exhibited in the hospitals and dispensaries of cities is twice curs'd: it curses him that gives and him that takes. It degrades and pauperises the recipient, while it seriously injures the profession to which the dispensers of it belong. A few figures from Dr. Atkinson's address will show the extent to which the abuse prevails. In London, in 1872, £994,378 was spent on gratuitous medical aid, and "nearly three persons in ten of the population received medical charity." In 1885 "the attendance upon the various London hospitals and dispensaries was 1,312,098 patients, or 72,785 in-patients and 1,239,313 out-patients. These figures do not include patients treated at provident dispensaries, or those in alms-houses, work-houses, lunatic asylums, or in "homes" for the aged, infirm, or destitute, or for convalescents or incurables, or in orphanages." Again, in Liverpool, in 1876, of a population of 521,544, 172,594 applied for out-door medical charity—over 33 per cent.—besides 15,882 sick paupers treated by poor-law medical officers. The

following remarks are not restricted in their applicability to Marylanders. At this side of the Atlantic also many worthy people do more harm than good by injudicious almsgiving:—

"Practical benevolence is so inseparably united with all religious teaching and performance, that it has inevitably come to be largely subjective, and to have its motive often in a desire to reconcile oneself with God and with one's conscience, rather than in a sincere love for the happiness and welfare of mankind. Absolved by the act of giving, the donor does not especially interest himself in the application of his bounty. Benevolence, again, often shrinks from witnessing the sufferings which it is willing to alleviate, or lacks the energy that is requisite in a personal supervision of the distribution of the alms which affluence enables it to bestow. Charity, thus dispensed without discrimination or judgment, relieves much distress; but it not only lamentably fails to provide more than a fraction of the relief that a wise application of it would secure, but it tends, to an almost inconceivable extent, to intensify the very evils it is intended to avert."

In the Report from the Section on Obstetrics and Gynæcology a subject is discussed, interest in which has been revived in consequence of modern improvements in operative procedure. Dr. L. E. Neale, Demonstrator of Obstetrics in the University of Maryland, examines the question, which he characterises as "the greatest of all questions before the obstetric profession—viz., Cæsarean section *versus* craniotomy on the living child." He cites the encouraging case of Mrs. Reybold, "who, having been twice successfully delivered by craniotomy by the renowned Meigs, was subsequently twice delivered by Cæsarean section, by Gibson, of a living child; and she lived in the ripeness of a happy old age in the enjoyment of the two children and six grand-children." It is clear that statistics of operations performed in older days, when abdominal sections were rough and rare, and when they were deferred until too late, are useless as guides in the present day. The results of modern Cæsarean section, like those of modern ovariotomy, show progressive improvement. "Of the first fifty Sänger-Cæsarean operations of Continental Europe which were completed in March, 1887, and resulted in saving forty women out of fifty, and forty-eight of their children, the first series of twenty-five operations saved only seventeen women, while the second twenty-five operations saved twenty-three mothers and twenty-four of their children—a result of actual saving of human life certainly far above the possibilities of craniotomy on the living

child." The results hitherto obtained in recent years are highly satisfactory. We extract some of Dr. Neale's figures :—

"Sixteen cases, by Leopold (10), Sänger (4), Obermann (1), Donat (1), resulted in fifteen maternal recoveries, 93·7 per cent., and all the children alive. In a paper read before the German Gynæcological Association in June, 1886, by Sänger, on the 'Simplification of the Technique of the Cæsarean Section,' he reported thirty operations, with twenty-one recoveries; 73 per cent. maternal recovery. In the *Medical News* of September 18, 1886, Dr. R. P. Harris published a table of all the Sänger operations that had been performed up to that time, with the result of saving $68\frac{8}{19}$ per cent. of women of all countries, and 78 per cent. in Europe alone. The showing for our own country has been much worse. 'Prior to 1887, the Sänger cases of the United States were all fatal, because operated on *in extremis*." During the subsequent fifteen months, however, bringing us up to the present time, we have had thirteen Sänger operations, making a total in all of sixteen for this country (U.S.), saving seven women and ten children.

"When the operation has been repeated on the same subject, Langren has shown that out of 119 multiple Cæsarean sections upon 48 women, there were only eight mothers lost, which accords with the general result.

"Now, in contrasting these results and possibilities of Cæsarean section with the results and possibilities of craniotomy on the living child, not only are we at once confronted with the death of every child, but it is indeed interesting to remember that Keyser estimates the maternal mortality from second craniotomy operations on the same woman at 29 per cent., and in the United States it has been 25.

"A showing, probably made with the intention of representing craniotomy in a favourable light, collected from Rokitansky, jr., C. Braun, A. Merkel, Bidder, and Spiegelberg, gives 359 operations, with 29 maternal deaths, or a mortality of 100 per cent. to the child, and 5·57 per cent. to the mother."

Recent controversies add interest to the following extract from a paper on complete excision of the larynx by Dr. J. H. Branham :—

"I have been able to find one hundred and nine cases of excision of larynx, reported as follows :—Seventy-eight contained in table of Solis Cohen, in Ashurst's Encyclopedia of Surgery, and in Baratoux's article (see *Annals of Surgery*, Nov., 1886, p. 397); thirteen in Solis Cohen's table, not in Baratoux; and seven in Baratoux, not in Solis Cohen's; six additional cases by E. Hahn; one by Morris (*Lancet*, 1886, p. 379); one by Agnew (*Phila. Med. News*, 1887, p. 401); one additional by

Labba (*Annals of Surgery*, 1886, p. 28); one additional by Lange (*Annals of Surgery*, p. 37); one by Gardner. Of these, thirty-eight died from immediate result of operation, twenty-six were well when last heard from, forty died from recurrence or other causes, and five result not stated. Twenty cases of partial excision, collected by Gerster (*Annals of Surgery*, Jan., 1886), give a mortality of twenty per cent. from immediate result of operation."

Archives de Médecine Expérimentale et d'Anatomie Pathologique, publiées sous la direction de M. Charcot, par MM. Grancher, Lépine, Straus, Joffroy. Première Série. Tome premier. 1889. No. 1. Paris: G. Masson.

The *Archives de Physiologie Normale et Pathologique* has, since its establishment in 1868, held a place in the very first rank of scientific journals. Latterly it has been occupied mainly by pathological matter, although from time to time valuable physiological papers have continued to appear in its pages. Some years ago it was enlarged to two volumes annually, but still it was inadequate to receive all the matter at its disposal. This year it has been divided into two distinct journals. The editors thus define the respective objects of these publications:—

"Under the old title of *Archives de Physiologie Normale et Pathologique* M. Brown-Séquard, assisted by MM. Dastre and François Frank, will publish a journal having for its object, on the one hand, the application to physiology of clinical observation and of experiment; on the other, that of physiology and of experimental pathology to the science of medicine, and especially to pathogeny.

"The other journal, established by M. Charcot, assisted by MM. Grancher, Lépine, Straus, and Joffroy, under the title of *Archives d'Anatomie Pathologique et de Médecine Expérimentale*, while by no means neglecting the physiological side, will receive more particularly works which aim at the scientific elucidation of medicine by pathological anatomy, micro-biology, and therapeutical and clinical experimentation."

It is the first number of this second journal to which we now direct the attention of our readers. It contains eight original articles, all of the highest merit:—

I. *Research on the Duration of Life of Pathogenic Microbes in Water*, by Straus and Dubarry. The authors find that the pathogenic bacteria multiply and live in water almost as well as those whose native habitat is water. Thus B. anthracis was found alive

after 131 days, the typhoid bacillus after 81 days, cholera bacillus 39 days, tubercle bacillus 115 days, bacillus of glanders 57 days, Friedländer's pneumonia bacillus 8 days, &c.

II. *Research on the Behaviour of the Typhoid Bacillus in the Soil*, by Grancher and Deschamps.—It was found that in the experiments the bacillus did not filter through the cylinders of clay used, but was stopped at a depth of 40–50 centimetres; that it was found living in the clay $5\frac{1}{2}$ months after it was sowed, along with all the other bacteria which were present in the soil; that it did not penetrate into the tissue of healthy vegetables.

III. *On the Action of Some Antipyretics on the Destruction (Consommation) of Carbo-hydrates in the System*, by Lépine.—The antipyretics employed were antipyrin, chloride of quinine, sulphate of thallin, and acetanilide. The animals used were dogs and guinea pigs. It was found that in healthy animals under the influence of antipyretics the destruction of glucose in the capillaries is lessened, there is also diminution in the formation of glucose from glycogene in the liver and muscles, and, in some instances, a diminution in the formation of glycogene. These facts explain how the antipyretics, independently of their vaso-dilator action, lower the central temperature and diminish the production of heat when they are given in sufficient doses.

IV. *Contribution to the Pathological Anatomy of Acute Infantile Spinal Paralysis*, by Joffroy and Achard.—This paper, illustrated by a plate, gives valuable information on the changes in the muscles, nerves and nerve-roots and bones in infantile paralysis.

V. *Note on the Culture of the Tubercle Bacillus*, by Martin.—There has been great difficulty in cultivation of this bacillus, which will not grow on ordinary media. Martin proposes new media on which he has got good growths. These are illustrated in a well-executed coloured plate. He finds, as best, a gelose (Agar Agar), with glycerine, and infusion of herring muscle; instead of plain water a mineral water—that of Mont Dore—was found preferable. He has also obtained cultures on gelose, to which glycerine and mineral matter only were added.

VI. *Influence of Cortical Lesions on Vision*, by Lannegrace.—This is the first part of a long experimental research made on dogs and monkeys, with the aim of finding the lesions which cause, on the one hand, crossed amblyopia, and on the other homomymous hemianopsia, and the mechanism by which these symptoms are produced. We cannot give the results until the completion of the work.

VII. *Contribution to the Study of Epithelioma of the Sudoriparous Glands*, by Darier.—This work is also incomplete. This first part is illustrated by two plates.

VIII. *Histology of Atrophic Marks on the Skin* (*vergetures*), by Troisier and Menetrier.—The authors look on these marks found in pregnancy and other conditions which cause distension of the skin, and in other diseases (typhoid fever, phthisis) where their pathogeny is uncertain, as purely mechanical lesions, independent of atrophy or inflammation. They consist in an elongation at certain points of the constituent elements of the skin, with rupture of some of the elements, more particularly of the elastic fibres. The paper is illustrated by two good engravings.

Following the original papers is a historical and critical account of the theory of spontaneous generation by Straus, of which only a part is contained in the present number.

Finally, abstracts of the paper of Liviereto on the effects of regimen and drugs on the excretion of carbonic acid in diabetes, and of the paper of Cornet on the distribution of the tubercle bacilli, which was noticed in a recent number of the *Dublin Journal of Medical Science.*

It will be seen how varied and important are the contents of this number. We most cordially recommend the new venture to all our readers, and wish it a prosperity equal to that of the old *Archives*, of which it is the descendant.

[The publication of this notice has been unavoidably delayed.—Ed.]

The Physician as Naturalist. Addresses and Memoirs bearing on the History and Progress of Medicine, chiefly during the last Hundred Years. By W. T. Gairdner, M.D., LL.D. Glasgow: Maclehose & Sons. 1889. Pp. 436.

The first two addresses in this volume will be fresh in the memory of most of our readers. The address as President of the British Medical Association, delivered last year, gives the title to the collection, and deals with the importance of scientific education to the medical man, more particularly an education in physics, the want of which is, perhaps, the greatest of the many great defects in the present system of medical training.

The second address is that delivered in this city at the meeting of the Association in 1887. In it the question, "Has the Art of

Medicine advanced during the last hundred years?" is discussed. The great fairness and open-mindedness which are shown in all Dr. Gairdner's writings are here peculiarly manifested. It is admitted that antisepticism in surgery, the antipyretic treatment of fevers, the use of cod-liver oil in consumptive diseases, anæsthetics, bromides, cardiac tonics, although believed by the speaker to constitute great and genuine advances in the treatment of our forefathers, are all open to question. Still, real advance is to be recorded. The shaking off of belief in dogmas, the freedom of thought now tolerated, are distinctly steps forwards. The recognition of hygienic remedies, and of the identity of the means by which disease is to be prevented on the one hand and cured on the other; the belief that in acute diseases there is a self-healing tendency which, if given fair play, will lead to a satisfactory result; the abandonment of the abuse of venesection on the one side and excessive stimulation on the other—all these are sufficient to justify the statement that medicine has advanced towards stability within the present century, and few have taken a more worthy and prominent part in this advance than Dr. Gairdner himself.

The next four essays deal with the treatment of typhus fever. It is maintained that this disease runs a remarkably regular course, with a tendency to spontaneous recovery; that crisis, in the sense of a sudden subsidence of all the symptoms, is unusual; but that an improvement is shown about the tenth or twelfth day by a diminution in the frequency of the pulse. This sign is so important that, if present, even although the other symptoms may appear to be as bad or worse than before, a favourable prognosis may be given. This regular course of the disease may readily be disturbed by unsuitable treatment, particularly by excessive employment of alcohol; and, as is well known, Dr. Gairdner's motto is *lacte non vino*. In this controversy against the old alcoholic treatment of acute diseases Dr. Gairdner manifests the most scrupulous impartiality, but shows by the most convincing statistics the advantage that the modern treatment, mainly introduced by him, possesses over that in which alcohol was looked on as *the* remedy, and was given in doses that we of the present day can hardly conceive as possible.

The Essay on Mind and Body is the Presidential Address delivered before the Medico-Psychological Association, at their meeting in Glasgow in 1882. In it the author shows that the principles which have led to the improvements in the treatment of

the insane are the same as those which have altered for the better the treatment of ordinary bodily ailments.

In the Presidential Address delivered before the Sanitary Institute of Great Britain, Dr. Gairdner describes his efforts, as Sanitary Officer of Glasgow, for the improvement of the condition of that city, and the success which has attended his labours.

The remaining Essays, on the Progress of Pathological Science, Homœopathy, the Present Aspect of Medical Science, and Dr. Alison, are full of interest and instruction.

On the whole, we feel that our gratitude is due to Dr. Gairdner for having made the papers in this volume more accessible than they were in their scattered condition. They are full of those qualities which should make up the ideal physician—learning, honesty, charity, highmindedness. There are few who will read this volume and not be the wiser and the better for it.

Clothing. By Francis Vacher, F.R.C.S. Reprinted from *Provincial Medical Journal.* 1889. Pp. 20.

"A great deal that is true, but very little that is new," sums up Mr. Vacher's pamphlet. Written and illustrated in the style of the well-known "Madre Natura; or, The Moloch of Fashion," it is one of the numerous waves which have beaten against the rock on which the mysterious Goddess of Fashion dwells, and fallen back, leaving the rock to all appearances no whit the worse.

Critics ought, however, to be careful lest they ride a hobby too hard. Mr. Vacher recommends that men in evening dress ought to have their clothes lined with flannel, wear a large chest-preserver of two layers of thick flannel, at least three inches broader and longer than the waistcoat opening, over the jersey, and fold a strip of flannel within the white tie. Dancing men had better avoid advanced sanitary reformers.

Notes on Venereal Diseases. By H. De Méric. London: Henry Renshaw. 1889. Pp. 97.

These notes give the characters of the various venereal diseases, and their treatment, in a clear and interesting manner. Sometimes the writing is a little extravagant, as on page 85, where, dealing with leucorrhœal discharge from the womb co-existing with a specific vaginitis, we read:—"The meeting of the two

discharges, the one acid and the other alkaline, forming a third, most virulent and irritating."

The author describes a feeling of uneasiness which comes over the patient during the period of latency of the syphilitic chancre as of very common occurrence. He describes it as "a sensation of being thoroughly ill during two or three hours or more, without any assignable cause, which sensation as suddenly passes away." It generally occurs at about two-thirds of the period of latency.

A Text-book of Human Physiology. By AUSTIN FLINT, M.D. Fourth Edition. London. 1888. Pp. 872.

THE present edition of this well-known and justly-popular text-book has undergone considerable alteration—in fact, it has been, as we are informed, entirely rewritten so as to bring it well up to the knowledge of the present day. The author—wisely in our opinion—limits the scope of his book more than is done by some writers of physiological text-books. The history of the science is much curtailed in this edition. It is not attempted to give a complete account of the chemistry of the body; such attempts usually fail where the great science of physiological chemistry is cut down to the necessary limits to make one section of a text-book. The subject of histology and microscopic anatomy is fairly well treated, so far as it is essential for the understanding of physiological processes; but we should like to have seen more space given to instruments and methods of research, for it is only by an adequate knowledge of these that sound information on the results got by their use can be obtained. We quite agree with Dr. Flint in thinking that the aim of a writer of a text-book should be to give a connected and intelligible statement of all established facts, and not to air his own peculiar views and theories; and it must be admitted that this aim has been realised in the work before us. It will be found a reliable and good guide by the physiological student, and the excellence of the text, as well as the number and clearness of the illustrations, and the large and handsome type, should make it as popular a book on this side of the Atlantic as it has long been in America.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND GYNÆCOLOGY.

By Andrew J. Horne, Fellow and Examiner in Midwifery, King and Queen's College of Physicians; ex-Assistant-Physician to the Rotunda Hospital, Dublin.

SUCCESSFUL EXTIRPATION OF A CANCEROUS UTERUS AT THE SIXTH MONTH OF PREGNANCY.

Zweifel (*Centralblatt für Gynäkologie*, March 23, 1889) reports this interesting case, together with a general review of the subject. According to the authority of Cohenstein only twenty-nine per cent. of the pregnant women with this complication abort—even when the cervix and the lower uterine segment are extensively diseased, the pregnancy generally goes to full term. It is usually stated that cancer grows more rapidly under the influence of pregnancy, but the latter condition alone must not be considered, the effects of parturition and the puerperium should also be taken into account. The three factors together undoubtedly promote the increase of the growth.

It should be remembered that as long as the disease is limited to one lip of the cervix, and the latter is still dilatable, spontaneous delivery is possible. When, on the contrary, there is extensive infiltration, labour is retarded, and either rupture of the uterus occurs, the woman dies undelivered, or the pains cease, and the retained fœtus becomes decomposed.

With regard to the treatment during parturition, different plans have been recommended. Bischoff has incised the indurated cervix, or scraped away the cancerous tissue with success. Gönner recommended this as the routine practice to be pursued. The forceps have been used successfully. Version is generally regarded as objectionable on account of the danger of lacerating the uterus. Craniotomy is equally dangerous. Cæsarean section has given good results when the child was living and viable.

Zweifel thinks that if the patient is seen before labour sets in, it is better to scrape away the diseased tissue, an operation that does not injure the fœtus, and does not necessarily cause abortion. Whenever the case is in the inoperable stage, and the life of the mother can be prolonged by curetting, we should operate without regard to the fate of the child. If the disease is limited to the cervix, and the patient is seen before the third month of pregnancy, the uterus should be extirpated per vaginam. After that period the organ is too large to remove in that way, and must be extirpated by laparotomy. In either case a radical operation is indicated at once, to temporise until the child becomes viable is to wait until the disease has spread, so that the mother will have no chance of recovery. The following successful case is reported :—The patient, aged thirty-two, began to have severe pains in the lower part of the abdomen soon after entering upon her seventh pregnancy. Later profuse hæmorrhages occurred, so that she entered the hospital supposing that abortion was imminent. On examination the fundus uteri was found to be at the umbilicus, and the fœtal heart could be heard. The portio vaginalis was much hypertrophied, and was the seat of an indurated growth which bled easily on being touched. Chloride of zinc was applied to the diseased surface, creolin injections being used after the formation of a slough.

Since the disease was limited to the cervix, it was determined to extirpate the uterus. The patient was first placed in the lithotomy posture; the portio vaginalis was exposed, and was separated on all sides by the thermo-cautery. Douglas's pouch was then opened with the same instrument, and the vagina was packed with iodoform gauze. The patient was next put in the ordinary position for laparotomy, and a long incision was made in the abdominal wall, through which the uterus was rolled out, opened, and the child extracted, the cervix having been encircled with a temporary rubber cord in the usual manner. The broad ligaments were then ligated in sections, the cervix was transfixed and tied with silk, and the cord was removed. The body of the uterus containing the placenta was excised, after which the bladder was dissected off from the stump, the operation being facilitated by counter pressure made per vaginam by an assistant. The ligatures were brought down into the vagina. The lithotomy posture was again assumed, the abdominal wound having been closed in the usual manner, and the stump was removed from below as in an ordinary vaginal hysterectomy. The wound in the fornix was partially closed with

catgut sutures, a T-shaped drain was introduced, and the vagina was packed with iodoform gauze. The patient lost but little blood, and made a good recovery. The child, of course, lived but a few minutes.

The advantages claimed for this method are the fact that the abdomen is opened only a short time, the slight hæmorrhage and the possibility of saving not only the mother but the child (when viable), since the life of the latter is not imperilled by the preliminary operation on the vagina. Previously Freund's operations, undertaken under the same conditions, resulted as follows:—Schröder lost two patients, Bischoff one, and Spencer Wells saved the mother.

EXPERIENCE WITH PYO-SALPINX AND ITS OPERATIVE REMOVAL.

A. Gusserow (*Archiv für Gyn.*, xxxii., 2), has, during the past three years, operated in thirty-one cases on account of pyo-salpinx, in ten of which he had removed both tubes; but one case died, and that of septic peritonitis. In all the cases there had been symptoms of perimetritis for longer or shorter periods, before pyo-salpinx had been demonstrable. It is impossible to determine the existence of a closed tube sac filled with pus before adhesions have taken place at the abdominal openings of the tubes.

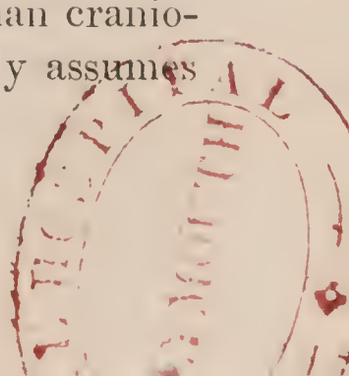
The ætiology, therefore, resolves itself into that of perimetritis. Although gonorrhœal infection plays an important part in its production, it must not be over-estimated; cases of perimetritis can often be traced to abortion, labour, &c. Closure by perimetritis must always occur before the purulent secretion can collect in a tube, closure of both tubes is not essential, and no predilection as regards situation is noticeable with regard to unilateral pyo-salpinx. A coincidence of great importance was the almost invariable participation of the ovaries in this disease. In some cases the ovaries and tubes formed one abscess cavity, scarcely capable of anatomical distinction.

The symptoms of the patients are all those of chronic perimetritis. The patients suffer from symptoms of varying pain and oppression, intensified by any unusual or prolonged bodily exertion. The author could not fix upon any symptom as pathognomonic of pyo-salpinx—in his experience many of the symptoms regarded by others as peculiar to the trouble had been wanting, such as profuse menstruation, which is often dependent on other distinct causes, which are simply coincident. The great danger of the disease is

the bursting of the tube, which may occur at any moment, and prove quickly fatal. The danger from the entrance of pus into the abdominal cavity is much exaggerated; he had been unable to prevent this accident while operating, in eighteen out of the thirty-one cases, and in only one case did peritonitis follow, proving fatal; the latter may have been the result of septic infection from without, or from the retention of a small portion of a diseased tube, as none of the other seventeen cases showed septic symptoms. There is but one remedy for pyo-salpinx, and that is operative removal. The operation is difficult, because of the small size of the tumours, and their deep situation in the broad ligament, and also on account of the extensive perimetritic adhesions. Gusserow has of late practised making the incision smaller and smaller. He always removes the ovary belonging to the diseased tube, or both ovaries when both tubes were affected. The danger of the operation is slight. Hernia is one complication likely to follow the operation; the other—and one more difficult to prevent—is the development of perimetritis.

Leopold (*Archiv für Gynäkologie*, Band. 34, Heft. 2), has added eight recent Cæsarean sections to his record, and now aggregates thirty-one of his recent operations; seven were done for contracted pelvis, and one for eclampsia. He employs the elastic ligature about the cervix, passing it once around, and drawing it just tight enough to prevent hæmorrhage; he considers it indispensable. Stringent antisepsis is practised; the vagina and cervix are carefully douched and filled with iodoform gauze. He does not incise the uterus *in situ*, but turns it out of the wound, and when the fœtal heart-sounds are weak and irregular does not wait to insert stitches in the abdominal wound, but has the abdomen closed by the assistant's hands, while he quickly incises the uterus and extracts the child. His material for deep sutures is chromicised catgut, for superficial fine silk.

His results in twenty-five cases of conservative Cæsarean section are: maternal mortality, eight per cent; fœtal mortality, nil. In comparing craniotomy and Cæsarean section, he estimates maternal mortality after craniotomy to be nil; he believes that Cæsarean section is at least five times more fatal for the mother than craniotomy, and is to be performed when the mother willingly assumes the risk of the operation.



THE DIAGNOSIS OF PLACENTA PRÆVIA BY PALPATION OF THE ABDOMEN.

In the *British Medical Journal* for June 15, 1889, H. Spunner details seven cases of placenta prævia, in which he had been able by palpation of the abdomen to diagnosticate the presence of the placenta or its absence from the front wall of the lower segment before a vaginal examination was undertaken, the diagnosis being subsequently verified by vaginal and intra-uterine examination. The seven observations were all made in multiparæ, with head presentations, before the membranes were ruptured, and in the absence of pains.

The following rules for making the diagnosis were formulated :— In an ordinary vertex presentation (placenta in the upper segment), the occiput, forehead (at a higher level), and side of the head could, under favourable circumstances, be distinctly felt in the lower segment of the uterus by abdominal palpation. In a case of placenta prævia, in which the head presented, the head was not felt where the placenta was situated; it was distinctly felt where the placenta was absent. In cases where the placenta was in front, the organ was felt as an elastic mass of the consistence of a wetted bath-sponge, which kept the examining fingers off the head. Its edge might be felt, and had the shape of the segment of a circle. Within the circle all was obscure to the touch ; outside the circle the head or other part of the child was plainly felt. Impulses to the head were not clearly felt through the placenta.

VERSION IN CONTRACTED PELVES.

Nagel (*Archiv. für Gynäkologie*, Band 34, Heft. 1) reviews the literature of this subject, and reports fifty-nine cases of version and extraction, which he compares with twenty cases of forceps delivery in contracted pelves. His conclusions favour version as a mode of treatment, and are based upon the following practical considerations :—The varieties of contracted pelves most commonly encountered are the symmetrically contracted (justo minor), the flat pelvis, and the flat rachitic pelvis. Nagel is convinced that podalic version is equally indicated in these pelves. He considers the measurement of the diagonal conjugate of little practical value, and measures the true conjugate only. The shortest true conjugate in his cases measured three and one-eighth inches. His record is 60 versions in contracted pelves, without a maternal

death; 61 children were delivered, 46 of whom lived. Version should be performed early; mortality and morbidity increase with the duration of labour. The obstetrician must not delay until the os is fully dilated, but should perform version as soon as the hand can be introduced and the breech brought into the cervix, when uterine contractions generally dilate the os sufficiently to permit birth. So long as the membranes have not ruptured, the case should be left to nature; but in transverse positions, when the membranes rupture, version should be performed at once—extraction should follow as soon as the os is sufficiently dilated. Nagel considers the use of the forceps after version unjustifiable. He performed version in all grades of pelvic contractions, as it affords the fœtus a chance for life, and perforation of the after-coming head has been no more difficult than when the head presents.

In delivering those cases, Nagel relies chiefly upon external pressure upon the head through the abdominal walls. Traction should not be made upon the trunk until flexion is well established. At the moment when the head emerges undue haste is to be avoided, as children may survive after a delay of five or ten minutes.

PRECOCIOUS MENSTRUATION.

Dr. Diamont, of Vienna (*British Medical Journal*), reports a case of precocious menstruation. The child was barely two years old when menstruation commenced; it lasted four days, and recurred with regularity till the child was six years old. At that age her breasts, loins, and pelvis were of the adult type; the axillæ and pubes were thickly covered with hair.

CONGENITAL ABSENCE OF FIBULÆ.

At a meeting of the Midland Medical Society on the 6th of March, 1889, Mr. William Thomas exhibited a child, aged four years, in whom there was congenital absence of the fibulæ and corresponding parts of the feet—to wit, the outer two metatarsal bones and phalanges—(*Lancet*, May 4, 1889).

SOZOIODOL.

The latest addition to very many antiseptic remedies that compete for professional patronage is sozoiodol ($C_6H_2\ OIII_2\ So_3H\ 2H_2O$), a compound of phenol, iodine, and sulphur. Its antiseptic properties largely depend on the disengagement of iodine. Being odourless, it has an advantage over the *quondam* favourite iodoform.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.K.Q.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF MEDICINE.

President—Lombe Atthill, President of the King and Queen's College of Physicians.
Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, May 17, 1889.

John William Moore, M.D., in the Chair.

Abdominal Section in Typhoid Fever.

Dr. J. H. Nicholas read a paper on the above subject. The histories of two cases were read and specimens shown for the purpose of inquiring as to whether the operation of opening the abdomen was justifiable in perforation of intestine in typhoid fever.

It was assumed that the acute peritonitis, which was present in these cases, was set up by the presence of the fæcal matter in the abdomen; and consequently, that the existence of this diffused form of acute peritonitis might be accepted as a diagnosis of perforation existing; and as recovery, with fæcal matter exuded into the cavity of the abdomen, was absolutely impossible, it was suggested that an operation might be performed early in the disease before collapse appeared—the operation consisting of opening the abdomen, washing out and sewing the opening to the anterior wall of abdomen. Among the many objections, the following were mentioned:—

1. Difficulty of diagnosis.
2. Condition of the patient.
3. Difficulty of finding the perforation.

4. Diseased condition of wall of gut.

5. Many cases diagnosticated as ones of perforation having recovered.

The author endeavoured to answer these objections.

Dr. Ball said the treatment of perforating ulcers from typhoid fever by abdominal section had been adopted on several occasions with results uniformly fatal; and if not uniformly so, yet that such were to be expected was due to the fact that the union of intestinal wounds demanded not only a very accurate adjustment but a very rapid healing of the parts.

Mr. L. H. Ormsby endorsed Dr. Ball's observations, and therefore if he performed abdominal section at all he should select his case. Indeed, if called upon by a physician to perform the operation he would refuse rather than hold out any hope of success.

Dr. Myles wished to know how an accurate diagnosis was made. The text-writers pointed to the disappearance of the area of tympanitic dulness, but he knew of a boy who, having been run over by a car, sustained severe injury to his abdominal wall and manifested all the symptoms associated with perforation of the intestine. Though urged to do an abdominal section, the surgeon in charge refused and the boy next day got well. He did not think it possible to select cases, the operation being one of necessity rather than of selection. The question was whether the operation would shorten the patient's life. He had himself seen patients who had survived typhoid with deep ulceration.

Dr. Nicholas, replying, said, as regards diagnosis, collapse from ulceration in typhoid fever did not come on suddenly, but appeared gradually to increase from an unknown commencement, and was due to the fæcal poison, and was not the result of perforation. The whole theory stood or fell in respect of the acceptance of the condition of acute peritonitis as being a point of diagnosis. The peritonitis was set up by the presence of fæcal matter in the abdomen and not by the extension of ulceration from the inflammation.

Case of Cholecystotomy.

Drs. Walter Smith and C. B. Ball reported a successful case of cholecystotomy. The patient, a young married lady, was suddenly attacked with sharp pain in upper part of abdomen. Two days later a small tumour was detected by Dr. Kough, with whom Dr. Smith saw the case. The tumour was diagnosticated as the gall-bladder distended by obstruction of the cystic duct, probably by gall-stones. There was no jaundice; the stools were of normal appearance, and there was no pyrexia. An exploratory operation was proposed and agreed to, and the operation was performed on March 1st by Dr. Ball.

The abdomen was opened in the middle line for about two inches above the umbilicus and the gall-bladder, which was deeply congested

and adherent to the surrounding structures by recent lymph, was brought up to the wound; it was punctured and exit given to fluid devoid of bile-colouring matter, but containing a quantity of whitish putty-like material (which was subsequently proved to be composed of crystals of phosphate of lime, $CaH\,PO_4$); the opening was dilated sufficiently to admit the entrance of a finger, and seven small gall-stones were removed. The cause of the obstruction could not be felt. The gall-bladder was stitched to the wound. Two days after operation a copious flow of bile came by the wound, and a plug of mucus was removed from the gall-bladder with a scoop; this had probably been the cause of the obstruction. The wound healed rapidly without leaving a fistula, and the patient completely recovered.

Dr. Ball mentioned the surgical aspect of the case as being eminently one, he said, in which the physician and the surgeon should go hand in hand.

Dr. Kough said he had the happiness of diagnosticating the mischief in the case under discussion. The tumour was plainly in the gall-bladder; and in that diagnosis Dr. Walter Smith agreed. As regards the progress of the recovery, the lady was apparently perfectly well. Dr. Ball having gone away, the lady again called his (Dr. Kough's) attention to the seat of the operation, and being alarmed at what seemed to be a recurrence, he opened the section and there exuded a couple of tablespoonfuls of limpid fluid. In a few days afterwards it was apparently filling again. On the second occasion the bile appeared for the first time coming from the gall-bladder itself. In the course of the last few days he received a letter from her stating that she was perfectly well.

Mr. Foy said the operation was performed in Venice in the year 1425.

Mr. Kendal Franks said there were some points of great similarity between the case and one in which he operated, the details of which he recorded at the Surgical Section. When the gall-bladder was opened there did not seem to be a gall-stone blocking the duct or impacted in the canal. It was the same in his case. There was complete obstruction, however. When he opened the gall-bladder he got four large stones, larger than those exhibited in the present case. Washing the gall-bladder out subsequently he met with a large clot of inspissated mucus. In the present case the inspissated mucus was the origin. In his case its removal had very little effect beyond the slight staining of bile on the fæces subsequently. His conclusion, beyond doubt, was that the case was one of obstruction due to stricture. That case made a complete recovery as far as relief from the origin of the symptoms went. An interesting fact was that the total discharge externally, without passing through the intestine, did not seem to affect the process of digestion. Indeed, her digestive power seemed to increase rather than diminish by

loss of bile from the ordinary channel. As a criticism on Mr. Ball's objection to the fistula at the side giving rise to ulceration, in his own case he saw the patient eighteen months afterwards, and there was no ulceration or inconvenience. In another case of a foreigner passing through Dublin, a boxfull of gallstones had been removed and she got a fistula, through which the bile flowed, but except the constant drenching, she suffered no ill effects, and there was no ulceration. With proper precautions and cleanliness, he did not think the dread of that need be a drawback where fistula resulted.

Dr. Ball briefly replied.

Note on an Old Venetian Bleeding-glass.

Dr. J. F. Knott read a communication on an old Venetian "bleeding-glass" which he purchased in Venice.

Note on the Fatigue Fever of M. Peter.

Dr. J. F. Knott read a note on the fatigue fever of M. Peter.

The Section adjourned.

LEONTIASIS OSSEA.

Mr. Bland Sutton (Clinical Society, April 26, 1889) reported a case of leontiasis ossea in a man of twenty-four years of age. The increased growth of the right upper jaw so interfered with respiration that it was excised. [Leontiasis ossea is simulated by akromegalia, of which a case was reported in the "Periscope" of the Journal for April.—Ed.]

MASSAGE.

At the adjourned discussion on massage treatment at the meeting of the British Gynæcological Society on the 27th of March, 1889, the majority of speakers strongly condemned the method. Dr. F. Barnes and Dr. Fenton referred to the injurious effects of massage, especially in cases of pelvic inflammation, which were frequently not recognised; and Dr. Bantock feared that, in a great measure, massage had degenerated into a system of quackery.

SYPHILIS FOLLOWING ON TATTOOING.

Mr. Barker (*British Medical Journal*, May 4) reports twelve cases in which syphilis followed on tattooing. The period of incubation varied from thirteen to eighty-seven days. In five of the cases the needles were either put in the operator's mouth or the marks were rubbed with saliva. Seven cases had, as a result of the operation, true Hunterian chancres, and five of them had rupial ulcers.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1888–89.

President—H. Burden, M.A., M.D.
Hon. Secretary—John M'Caw, M.D.

Wednesday, March 20, 1889.

Reminiscences of Scenes and Incidents in Parisian Hospitals some Twenty Years since. By the President of the Society, Dr. H. Burden.

Gentlemen,—Few persons, I imagine, are disposed to deny that obvious and great advantages may be derived from a visit to one or more of the chief centres of civilisation in Europe. To become an eye-witness to the profound influence exercised over social and political life by modes of thought and action widely different from those to which we have become habituated is mental discipline of the highest order. Such experience tends to tone down rudeness, prejudice, and uncharitableness, the offspring of a too-restricted intercourse with our fellow-mortals; but, above all things, it impresses upon us with a force and vividness, otherwise unobtainable, that greatest discovery of modern civilisation—namely, the equality of all men. Nevertheless, while I am willing to admit all this, and much more, in favour of foreign travel, I candidly confess that, in my opinion, the professional culture resulting from attendance upon continental cliniques has been, and is, greatly over-rated. On the present occasion I shall not attempt to discuss the question, but shall merely point out that in the majority of cases imperfect knowledge of the language causes much waste of valuable time, together with erroneous interpretation of statements made by the clinical teacher, and that peculiarities in the organisation of foreigners, though real, affect the manner in which we treat our patients so immaterially that they may, without sensible error, be safely discounted by a British practitioner. A Frenchman or a Frenchwoman—and I advisedly add woman, for a reason to which I shall hereafter refer—is, for all practical purposes, constituted on the same plan, is subject to the same accidents, suffers from the same diseases, and is amenable to the same treatment as one of our own countrymen. I do not ignore the fact, so properly and wisely stated by Professor Cuming in his Presidential Address to the British Medical Association, that differences exist in the proclivity of diverse races of mankind for certain specific diseases and morbid processes. My contention simply is that a continental

course of medical study should be regarded as a luxury, not a necessity—a luxury which, nevertheless, I would cordially recommend to every one who can command the necessary time and money.

Such being my views, you will not be surprised to learn that though I have twice resided in the French Capital, during many weeks each time, yet my primary object in going there was not precisely to avail myself of the manifold facilities it offered for increasing professional knowledge. My first experience of the inner life in Parisian hospitals occurred during my honeymoon trip. On that occasion my wife and myself dwelt in the city for a period of about six weeks. Each morning, with few exceptions, I spent several hours in one or other of the great hospitals.

My second visit to Paris took place about eight years later, in the course of an extensive tour through France. My companionship on this occasion was of a very different character from that of the previous one. I was now accompanied by a Canon of the Irish Church, of considerable literary repute, and by a large employer of labour and capital, who had achieved much fame in consequence of his archæological and other scientific publications. We penetrated far into the interior of France, investigating among other things the archæology, natural history, and geology of Auvergne. During our three weeks' stay in Paris I renewed my acquaintanceship with hospital physicians and cliniques. The Hôtel Dieu, the Children's Hospital, the Hôpital Lariboisière, the Salpêtrière, claimed the larger share of my attention, but my favourite resort was the Hôtel Dieu; while in it Velpeau's wards attracted me with preponderating force. The wards of the venerable temple were, I thought, overcrowded, the unoccupied floor space too limited, the ventilation deplorably insufficient. A certain measure of cleanliness, order, and neatness, was, however, not entirely wanting. For all that I do not think I ever saw, collected together in one place, so many profusely suppurating, ill-conditioned, and gangrenous wounds and sores, as it was my ill fortune to encounter there.

It will then be obvious that my sedulous attendance upon Velpeau's clinique did not result from a sense of unqualified satisfaction arising out of an investigation into the effects of his treatment. No, it was the man himself who attracted my humble admiration. A glance at the photograph, which I now present to your view, will suffice to convince you that he was by no means possessed of the face and figure or endowed with the grace of an Apollo. His was a homely countenance, and yet, withal, one upon which the eyes of an observer might dwell with pleasure. Small, deep set eyes, bushy eyebrows, high cheek bones, a flat nose, with concave bridge, a large mouth and well-formed chin, high, somewhat retreating forehead, scanty hair, large ears—such were his features; yet the honest earnestness of his expression, and the kindly light that shone from his eyes, made one oblivious to less pleasing details. Of medium

height, narrow-chested, drooping as to the shoulders, his muscular development apparently slight, he nevertheless held himself erect. Calm and dignified in manner, his bearing resembled that of an Englishman rather than what one was accustomed to look for in a typical Frenchman. He proceeded with his work deliberately and methodically, and yet accomplished much in a given time. In a few well-weighed impressive sentences he described symptoms and treatment to the eagerly attentive throng of pupils that surrounded him. His simple unadorned diction, free from any straining after oratorical effect, none the less forcibly conveyed the lessons he sought to inculcate.

One morning, having entered the hospital at an earlier hour than usual, I wandered, somewhat aimlessly, from bed to bed, awaiting the arrival of Velpeau. Presently he appeared at the door, accompanied by a young lady, the object of undisguised admiration on the part of a crowd of attendant students. The lady was enveloped in what, at first sight, appeared to be a garment of peculiar texture and material, which, descending from her head, and caught up in a graceful fold by her extended arm, fell upon and swept the floor. On reaching the middle of the ward the great surgeon halted and introduced the damsel to the students, and then informing them that she was a native of Tahiti, he showed them that what I had taken for a textile fabric was, in point of fact, a magnificent crop of hair full seven feet long. Another day while journeying round the wards my eye was arrested by a fracture of the lower end of the radius put up in the time-honoured pistol splint. Fresh from the teachings of our late Queen's College Professor of Surgery, I was seized with an impulse to direct Velpeau's attention to the existence and efficiency of Gordon's splint; but either my courage or my French failed me, probably both, and so, through my culpable ignorance and timidity, I fear that the imperfect appliance was long permitted to continue in use.

To an American, with whom I had been conversing, I remarked that this was a Colles' fracture. He replied that in England it might be called Colles' fracture, but that it was unknown to Americans by such a name, and that he was sure it was neither Colles nor any other mortal man, but the Lord Almighty who had invented the particular species of fracture in question.

In the Hôtel Dieu it was my good fortune to witness a feat in the art of percussion, which I had never previously, nor indeed have ever since, seen equalled. A patient, suffering from kidney disease, was under examination by the physician in attendance. The name of the latter I am unable to recall to mind. Tall, spare, erect, his features were pale, sharply cut, and as impassive as though carved in marble; his eyes brilliant and piercing as a hawk's. A black frock coat, closely buttoned up to his throat, contributed to impart a thoroughly military air to his figure. He turned the

patient over on his face and proceeded to percuss the region of the kidney. Then he called for pen and ink and drew, in outline on the skin of the man's loin, the form of the underlying organ. When completed, the figure represented a kidney of normal shape, but measuring about half an inch to an inch more than the healthy viscus in every diameter. A murmur of applause burst forth from the train of students in attendance, and the physician passed on in triumph to the next bed.

Well I remember one day following a stout, short, broad-shouldered surgeon, whose intensely black hair and eyebrows, mobile and expressive features, dark lively restless eyes, the oft-repeated action of whose levator anguli scapulæ, and whose frequent expletives, constituted an *ensemble* of traits that left little room for doubt in one's mind as to his nationality. We had just left the bedside of an unfortunate sufferer, fast sinking from the effects of loss of blood, when a student beside me, in an audible whisper, suggested transfusion of blood as a justifiable and hopeful measure. In an instant my impulsive clinicien had wheeled round and confronted the unwitting offender. A circle of eager listeners was quickly formed round the man in authority, and we, with bated breath, assisted at as voluble and impassioned a piece of oratory as it has ever been my lot to hear. He dealt at considerable length with the histology, the chemistry, and the physiology of the healthy circulating blood, the changes that successively take place in it after it leaves the blood vessels, the evil effects that ensue on introducing such an altered and as it were foreign substance into the midst of the living stream of the patient, the numerous grave risks that attend the performance of the operation, and its all but invariable failure as a remedial measure. He appealed to the intelligence of his hearers, to their moral sense. He hurled invectives at the originators and execrated the supporters of the operation. In the course of his fierce denunciations, he stormed, he gesticulated, he almost tore his hair, and ever and anon he fixed a malignant vengeful eye upon the misguided youth who had broached the question. Finally he wound up in the following words :—" D'introduire ce fluide mort et corrompu dans les vaisseaux du corps humain vivant, c'est une chose aussi inutile que coupable." While I repeat this sentence I almost hear the ring of his voice as he uttered it. He turned out to be a good fellow after all, for before our rounds were completed he had apparently forgotten his resentment, and chatted gaily. Nay, he actually addressed, in a kindly vein, the erring student who had excited his wrath.

In the Children's Hospital Trousseau was now at the height of his glory. Here he continued to test to the utmost the efficacy of his special modes of treating croup, notable among which was his frequent recourse to section of the windpipe.

Some years before my visits to the hospital he had reported the results of the operation in 215 cases, of which 47 recovered and 168 died. He

concluded that there was little danger from tracheotomy, as he had performed the operation 121 times with only one mischance, so far as the operation was concerned.

I am sure you will acquit me of any intentional wish to exaggerate when I state that, if my memory serve me right, I saw, on more than one occasion, at least half a dozen young persons in the same ward whose tender necks were each transfixed by a tracheal tube.

The well-waxed oaken floors of this hospital were scrupulously clean, while the space unoccupied by beds was ample. In the wards the Sisters of Mercy were conspicuous by their clean, simple attire, and their kind, motherly, unobtrusive attentions to the little ones under their charge. It must have been clear to all unprejudiced observers that such services as theirs could not be purchased by any merely pecuniary reward. As they flitted to and fro, with noiseless step, their whole heart and soul appeared to be concentrated on their labours of love.

Of all the hospitals I frequented the Hôpital Lariboisière was the one in which I found the nearest approach to that perfection of hygienic arrangement and regime, now all but universally aimed at, and in many instances nearly attained, in such institutions.

The building formed the four sides of a hollow square, enclosing in its centre a group of flower beds, on which a brilliant and orderly array of expanded blossoms exhaled a delicious fragrance and captivated the eye by their judiciously contrasted and harmonious tints. The wide and lofty apartments received an abundant influx of light, which was copiously reflected from the highly polished surface of waxed floors that appeared to be absolutely free from dust or dirt of any sort. Down the centre of each room a series of metallic pedestals diffused and radiated heat supplied to them from some distant source. Fire places there were none. Ventilation, judging from the purity of the air, appeared to be amply provided for. The snowy coverlets of the beds were trimly tucked in and suggested comfort and repose. It was in this hospital that Chassaignac reigned—Chassaignac the inventor of the écraseur.

Here I saw in operation, almost at its birth, this instrument, destined in after years to hold a high and useful position among the paraphernalia of the surgeon's art. At the time I refer to it was, so to speak, on its trial, yet the effectual and bloodless manner in which it crushed its way through richly vascular tissues already indicated that in it lay the germ of a principle that might in the future be susceptible of great amplification. By the way, Chassaignac's fame does not rest upon the écraseur alone. To him we are indebted, among other things, for the introduction of the drainage tube, which in its various modifications has become scarcely less fruitful in good results than the antiseptic appliances properly so called.

One morning I persuaded my two travelling companions to come with

me to the Lariboisière. Having arrived there we found that it was the day and hour when patient's friends were permitted to see them. A large and motley congregation were assembled round the entrance, who pushed and jostled each other in their endeavours to obtain priority of passage through the door. We had, after a severe but successful struggle, reached a kind of ante-chamber, when two gentlemen, clad in rusty black, looking for all the world like respectable waiters who had seen better days, without provocation, attacked my friends, hustling and palpating them all over. I shall never forget the expression of indignation and alarm that shot over their faces at this sudden and unexpected assault, the depth of their feelings no doubt intensified by the circumstance that the attention of the assailants appeared to be concentrated upon their victims' pockets. I knew well enough the meaning of the ceremony, and so was prepared when my turn came to challenge the knaves for their impertinence. "Je suis anglais," I exclaimed. "Do you imagine," I added, "that I, a British surgeon and physician, am likely to carry forbidden articles of food or drink to your patients?" But whether it arose from my refined Parisian accent being unintelligible to their dull wits, or the suspicious bagginess of my pockets (we had come straight from the Palais Royal) suggesting contraband goods, or the inflexibility of the rule under which they acted, my expostulations went for nought, and I was obliged to submit to the same ignominious and humiliating treatment as the others.

If I went occasionally to the Salpetrière it was not because of any extraordinary advantages it supplied for obtaining professional instruction. Charcot had not yet appeared upon the scene. Neuro-pathology in general, locomotor ataxy, scleroses of the nervous centres, and myo-trophic lesions in particular, were still involved in a cloud of misinterpretation and obscurity. What drew me to that ancient hospice was the historical associations connected with it and the weird old-world aspect it presented. Having recently quitted the fresh and handsome boulevards, peopled by a gay, frivolous, over-dressed, gesticulating, chattering throng, the latest development of an age too prone to drown all thought of yesterday and to-morrow in the enjoyment of to-day, on entering within the portals of the Saltpetre House one found oneself suddenly face to face with the surroundings of a period nearly three centuries old. Roughly paved, uneven courtyards and quadrangles, and buildings, whose grey, weather-beaten, time-worn walls proclaimed the antiquity of their origin, everywhere met the eye. The inmates themselves presented an appearance in consonance with their environment. For the most part aged and imbecile, they wore the aspect of a race who had survived the conditions of a long forgotten past. The dreamy quietude of the place subdued the mind to meditation on byegone events suggested by the scene. The nature of saltpetre, the invention of gunpowder, Louis XIII., the French Revolution, and the tragic fate of the illustrious chemist, Lavoisier, who once laboured here, were

subjects that almost inevitably thrust themselves into the mental retrospect. How this slumbering abode of mental aberration has been roused from its lethargy! How Charcot has established in it a laboratory of research and a clinique of world-wide fame and resort! How it has, through his indomitable energy and zeal, been made to yield material for the elucidation of neurological problems that had baffled the efforts of all previous inquirers! All this is most graphically related by Ernest Hart in his recent delightful contributions to the pages of the *British Medical Journal.*

Of the other hospitals I visited I retain but an ill-defined remembrance, too shadowy to warrant me in recording my experiences of them. I shall, therefore, now proceed to sum up in a few words the impressions I carried away with me concerning Parisian hospital life in general. The wards in many of the hospitals were too narrow, the beds too closely approximated to each other, the provisions for ventilation utterly futile. I must, however, make exception in these respects in favour of the Children's Hospital, and, emphatically, the Hôpital Lariboisière. Nurses and nursing were, so far as I could judge, good everywhere; but the efficiency and devotion with which the Sisters of Mercy performed their arduous and trying duties merit special commendation. A Frenchman's flesh is, according to a great French surgeon, to wit, Velpeau, of a different nature from that of an Englishman. In accordance with, I suppose, some such belief the hospital dietaries were apparently framed with a view to the nourishment of a very peculiar sort of flesh indeed.

Granting that by a merciful dispensation of Providence a Frenchman's digestive organs have become enabled to prepare for assimilation an eternal succession of stews and sauces, with what a prodigal waste of physiological labour I shudder to reflect, nevertheless, I cannot but believe that even sick Frenchmen would have been materially benefitted by the substitution of plain roast and boiled meat, tender, juicy, broiled chops or steaks, eggs in their native purity, an abundance of sweet milk, and a modicum of fresh simply dressed vegetables, for the indigestible compounds I saw supplied to them. I am likewise firmly convinced that sparkling bitter beer and porter would have accomplished the desired object more effectually than the execrable vin ordinaire the patients were given to consume. With the French system of prescribing medicines I was most unfavourably impressed. The prescribers seemed to exercise the utmost ingenuity in producing a heterogeneous mixture of the most diverse and incompatible agents. The potency of the remedy was apparently thought to increase *pari passu* with the number of its ingredients. In the medical departments a vast amount of time and care was devoted to the physical examination of the chest. Stethoscope, plessor, and pleximeter were employed with marvellous precision. I have, in the course of my previous remarks, recounted a remarkable instance of the pitch of accuracy to which the art of percussion was

carried. I am, however, inclined to think that an undue prominence was given to, and a too slavish reliance placed upon, the signs elicited by these invaluable aids to diagnosis; but this, I admit, is only what one might have anticipated in the city that claims the honour of having given them birth. As regards surgical matters I have a very vivid recollection of the unscientific, not to say barbarous, fashion in which wounds and ulcers were treated. Whether it was with the intention of carrying out a fixed and well-defined principle or it arose simply from ignorance of the fundamental laws of repair, I am unable to say; but every dressing seemed to be applied for the purpose of exciting irritation or encouraging inflammation.

Here let me put in a plea in defence of a much maligned yet really innocent, nay, if properly applied, useful application. Charpie has often been falsely charged with much of the injury in reality inflicted by the manner in which it was employed. Charpie is in fact a clean, non-irritating substance manufactured from linen rags. How far, how very far, French surgeons then were from having arrived at that exquisite cleanliness in every detail of treatment for which skilled surgeons now battle with all their might and with all their soul would be too painful to relate in full. Suffice it to say, wounds and sores were, without compunction, allowed to remain, often for days together, bathed in pus and acrid discharges, with what disastrous consequences we all know.

Smaller operations, such as come under the head of "Minor Surgery and Bandaging," were, as a rule, neatly and expeditiously performed. But were the operation small or great it was invested with an air of pomp and ceremony to which we in this country are not accustomed. Your average Frenchman is nothing if he be not dramatic. Who but a Frenchman could have devised that imposing sweep of the arm and instrument, recommended in many of our text-books and adopted by some practitioners during the homely, every day operation of introducing a catheter? Who but a Frenchman could have conferred upon the manœuvre its grandiloquent title, namely, "tour de maître."

This tendency to pose for dramatic effect was noticeable during, and imparted a characteristic tone to, the proceedings at most of the major operations I saw. Nor was it unattended with certain advantages, for through its influence each important step in the operation was emphasised, the attention and enthusiasm of the spectators stimulated, and a style and finish given to the whole performance gratifying to the æsthetic sense. French surgeons enjoy the reputation of being brilliant operators, and I willingly add my testimony to the same effect.

Before concluding, I must fulfil my promise to explain why, in my assertion that Frenchmen exhibit the same organic structure as Englishmen, I considered it necessary to make special reference to women. I did so for the following reason:—When Demonstrator in Queen's

College, I was on one occasion asked by the Professor of Anatomy and Physiology to read and estimate the value of the answers he had received from students to questions set by him. "Describe the collar bone?" was the substance of one query. When I came to the papers of a certain candidate, his answer proved extremely interesting. The young gentleman's style was graceful and flowing, yet somewhat light and discursive. The anatomy of the clavicle, to judge from the tenor of the earlier part of his communication, appeared to be a distasteful subject, since he merely used that bone as a peg upon which to hang some favourite theories and doctrines of his own, which had the slightest possible connection with it. It turned out, however, that he had been reserving his strength until he had arrived at the peroration, for on reaching the last line I read the astounding statement that Frenchwomen have longer clavicles than Englishwomen. The apparent magnitude of the discovery was artfully enhanced by the bald and simple language in which it was announced. The fact, if fact it were, being new to me, I was placed in a position of some difficulty. If it were true, to how many marks was the candidate entitled for his answer? But with the discussion of this knotty problem I shall not trouble you. On inquiry I found that our philosopher had enjoyed the advantage of an entire session's medical study in Paris. The knowledge revealed in his answer was, I have no doubt, a mere bagatelle compared with the stores of information of a like nature he had acquired during his residence in the French Capital. Whether he arrived at his discovery by the comparison of a series of careful measurements made in the Osteological Museums of Paris with others obtained in Great Britain, or in a less laborious but much more agreeable manner, I know not. While I am prepared to admit to the fullest extent the value of his discovery, should it be confirmed by other *savants*, I am, nevertheless, equally ready to make him or anyone else a present of it.

I would still hold to my belief that a Frenchwoman is constituted on essentially the same plan as an Englishwoman.

Wednesday, April 10, 1889.

Some Possibilities of Preventive Medicine. By William Calwell, M.A., M.D., Surgeon, Ulster Hospital for Women and Children.

In these few remarks I shall depart from the usual course of papers which deal with special diseases or individual cases, or unique specimens and their minute examination, and shall ask your indulgence and forbearance in bringing before you a cursory and imperfect bird's-eye view of some facts in the history of medicine—shall ask you to forsake the microscope for the historical telescope, with varying powers. The subject

might be considered in one light as chimerical and utopian, in another as intensely practical. If the accusation be brought against me that there is a dearth of originality—that extracts from authorities do not constitute an original contribution—I shall cry *peccavi* at once; but, at the same time, I urge the magnitude, the extreme importance, of the subject as my excuse, and the fact that similar societies have anticipated me in considering the matter.

When we recollect the intensity and frequent recurrences in the past of the various plagues that from time to time devastated this land, and note their absence in later years, we realise that here we have forms of disease which at one time existed amongst us, but at present do not; and on considering the wofully deficient hygiene of the time, the stagnant cesspools, the surface drainage, the salt diet, the general mode of life, common even in London, and the present great improvements, we are justified in believing a causal relation between the two.

Again, consider the high mortality that formerly existed in the navy from scurvy, and the present complete immunity, and we have an instance of another disease formerly prevalent, now banished.

"Gaol-fever," or, in all probability, typhus, is a third example of the same, and small-pox a fourth. With regard to the latter, it must be remembered that one of every fourteen deaths was caused by it in London, one in ten in France, and that millions were calculated to be carried off by it in Europe during bad years.

Now, from all these we learn one and the same lesson, that for long people looked on these epidemics and plagues in the ordinary course of nature as inevitable; that gradually their cause became evident, and with the recognition of the cause came the endeavour to stamp them out. Let the question now be asked, are there any diseases present around us, carrying off thousands, which, from our habitude and hebetude, we look on as the inevitable course of nature, but which are no more inevitable than the plague, typhus, scurvy, and small-pox. Will our descendants look on us as we look on the past?

These are now four types of disease which comparatively may be termed extinct—at any rate, kept well under control. Let me mention two classes that till recently were tabulated under the heading of the "inevitables," but are now being gradually transposed, both by the profession and more slowly by the general public, to that of preventables —(*a*) surgical fevers, (*b*) typhoid, cholera, and diarrhœa.

That pyæmia, septicæmia, erysipelas, hospital gangrene, are being slowly banished by improved hygiene and by antiseptics—using the word in a broad sense, not confining it narrowly to any special dressing or lotion—will be generally acknowledged. The saving of life is undoubtedly great; the shortening of the recovery and convalescence, and the consequent lessening of suffering, is enormous. It must not be for-

gotten to notice the additional saving of life in those cases repeatedly operated on now that would not have been touched before.

With regard to the second class, I think it better simply to quote the emphatic and unmistakable opinion of Sir John Simon in his Local Government Board Reports on this subject. He says:—

"Adverting, then, summarily—in an administrative point of view—to the present state of medical knowledge and opinion as to the way in which enteric (typhoid) fever spreads its infection in this country, I would say that it is difficult to conceive, in regard to any causation of disease in a civilised community, any physical picture more loathsome than that which is here suggested—that apparently, of all diseases which are attributable to filth, this, as an administrative scandal, may be proclaimed as the very type and quintessence; that, though sometimes by covert processes which I will hereafter explain, yet far oftener, in the most glaring way, it apparently has an invariable source in that which of filth is the filthiest; that apparently its infection runs its course, as with successive inoculations from man to man, by instrumentality of the molecules of excrement which man's filthiness lets mingle in his air and food and drink.

"It seems certain that the distribution in England of an immense quantity of other specific diseases must exactly follow that disgusting type."

"It and much endemic diarrhœa are incessant witnesses to the same deleterious influence. The mere quantity of this wasted life is something horrible to contemplate, and the mode in which the waste is caused is surely nothing less than shameful. It is to be hoped that as the education of the country advances this sort of thing will come to an end; that so much preventable death will not always be accepted as a fate; that for a population to be thus poisoned by its own excrement will some day be deemed ignominious and intolerable."

"Enteric kills 20,000 annually."—(De Chaumont.)

Here are, then, four classes of disease, formerly rampant, now nearly extinct; two classes, formerly considered inevitable, now looked on as preventable, and with every prospect, according to authority, of becoming extinct also. We now come to a large class, at present, if I mistake not, still to a large extent a prisoner in the camp of the inevitables, but of which there are signs of hope of a rescue—I mean the tuberculous. Up to the present it will have been noted that the great saving of life was not in the improved methods of treatment, but in the entire prevention of the disease. So in this class the rays of hope we have are not in any improved mode of treatment, but in the prevention of the disease. I include in this head not merely pulmonary consumption, but also tubercular disease of joints, caseating glands, tubercular peritonitis, meningitis, strumous abscesses and ulcers; that these various lesions are caused by

one and the same poison, is generally acknowledged, and, no doubt, this will be accepted as such.

Now, my line of proof for this hope is this, that there are grounds for believing that a large amount of tuberculosis is transmitted from animals to man, and from man to man; that this transmission can be to a certain extent stopped, and so tuberculous disease in man lessened.

The first point to consider is what animals are specially liable to tuberculous disease. Principal Walley, of Edinburgh, in a paper read before the Edinburgh Medico-Chirurgical Society, states that wild animals are much less prone than domesticated; water-fowl are seldom attacked, while barn-door fowl are very liable; the horse and pig are in dispute; sheep have a remarkable immunity, and the bovine tribe is the most liable of all; in cows a tubercular inflammation of the udder is one of its commonest manifestations.

Now, the question arises—Is it possible that these animals—the cow, the fowl, the pig—may accidentally infect each other? We shall answer this by a series of quotations.

In 1865 Villemin inoculated rabbits with tubercle. When the rabbits were killed, a month afterwards, an abundant crop of tubercles was found in many of the viscera. Many investigators immediately took up the subject. The Privy Council were pleased to authorise that a research should be undertaken, and the inoculability of tubercle was proven. Koch, many years later (1882), announced the discovery of the specific organism which we have mentioned, and which is supposed to be the germ or cause of tuberculosis. The whole result may be admirably summed up in the words of Mr. Barker, in a lecture delivered before the Royal College of Surgeons, London, in June, 1888:—

"But it was not alone on the constant discovery of the bacillus in tubercle, be it remembered, that the theory of its causal relation to tuberculosis was based. Experimental research soon showed that no substance not containing these organisms was capable of producing in healthy animals the disease in question; and, on the other hand, that substances in which they were present, if inoculated with due precautions, invariably produced the disease in certain animals, not only locally, but, as a rule, also generally throughout the system." Can animals infect other animals otherwise than by inoculation?

"Bang, after describing tubercular disease of udders in cows, goes on to show that it is associated with the presence in the diseased udders of countless bacilli tuberculosis; and further he shows that the organism can be demonstrated in the milk of such an udder, and that such milk will produce typical general tuberculosis when supplied as food to sucking pigs or rabbits, or when injected into their peritoneal cavity. . . .

"The presence of phthisis in the animals in the Zoological Gardens was due, he had no doubt, to their eating tuberculous food. Dr. Haughton,

Honorary Secretary to the Zoological Society, found that when the monkeys were taken off meat—which consisted generally of carrion or diseased cattle unfit for human food—the phthisis diminished."—(Dr. Grimshaw, Registrar-General for Ireland, in the Transactions of the Royal Academy of Medicine in Ireland, 1887.)

"The injection of phthisical sputa into the air-passages will produce typical tuberculosis of the lungs, and healthy animals placed in an atmosphere contaminated with tuberculous dust are soon similarly affected."—(Barker.).

The next point that arises is this—Is the tubercle of animals the same as the tubercle of man? There is some doubt about this, but the balance of opinion leads to the view that it is, and that any microscopic difference is due to variation of medium. There are many proofs of man being affected by animals. The most convincing instance of this (*i.e.*, healthy man being affected) is to be found in the case of certain shepherds in the Swiss hills mentioned by Klebs. Amongst these hardy men, living in the purest air and apart from other unhealthy individuals, acute tuberculosis has been shown to have been produced by a diet consisting almost exclusively of bread and the milk of cows suffering from the same disease.—(Dr. Barker before R.C.S., London.)

These facts, when considered along with the occurrence of bacilli in milk, with the feeding experiments recorded by as many observers, and the great prevalence of tubercle in certain classes of animals, go far to prove, he thought, that milk is a source of tuberculer infection, especially in young children. He referred to the cases constantly cropping up in which pigs on dairy farms are affected with tuberculosis of a most typical character, and mentioned an outbreak (amongst pigs) on a dairy farm which could be distinctly traced to the milk of three cows in which the udders were markedly affected.

"In consequence of this report (Bang on 'Tuberculosis in Domestic Animals'), the Control Committee (in Copenhagen) advised the directors of the Milk Supply Company to order a fortnightly examination by a veterinary surgeon of all cows supplying milk to the company; this examination to include a most careful inspection for tuberculous udders. When will some such course be adopted in this country?"—(Woodhead, before the Hon. the Grocers' Company in the University of London, 1888.)

"Indeed, Professor Fleming has asserted that at least 25 per cent. of all dairy cows kept in towns are the subjects of this malady (tubercle). In the early stages the symptoms of the disease are ill-defined, the health of the animal is apparently not interfered with, and the milk secretion is as abundant as ever. In every dairy of any size there will probably be tubercular cows, some of them, perhaps, with tubercular deposits in their udders; and as it is the common custom with dairymen to mix together

milk yielded by different cows, it is not too much to assume that tubercle bacilli may be widely distributed in the milk supply of any town. On referring to the Registrar-General's summary, it is seen that in the ten years 1871–1880 tubercular diseases of alimentary canal caused amongst children under five years of age an average mortality of 2·55 per 1,000 per annum, which is more than twelve times as great as the corresponding mortality from these diseases of any other age-period of five years from the age of five up to 100; the average mortality from phthisis (*i.e.*, in lung) was only 0·77 in same period. In the matter of dietary there is one great distinguishing feature between this age-period and all others. Under five years of age milk, usually unboiled, forms the staple food of children. No other animal food (*i.e.*, than milk) is consumed by civilised nations in an uncooked state. There is as much danger, or more, connected with the practice of drinking unboiled milk as of eating raw flesh."—(Paper by L. Parkes, Assistant to the Professor of Hygiene, University College, London.)

The Congress on Tuberculosis, which recently took place at Paris, passed the following resolutions :—

1. That the local Councils of Health should be empowered to deal with all questions relating to the contagious diseases affecting domestic animals, including those not at present recognised to be transmissible to man. 2. That every means should be taken—including the award of compensation—to bring about the general application of the principle of seizure and destruction of the meat of tuberculous animals, irrespective of the gravity of the lesions. 3. That simple directions should be drawn up and profusely distributed in country districts and towns as to the best means of obtaining protection against tuberculous infection through the food, and particularly by milk, and to destroy the virus in the expectoration of phthisical patients. 4. That dairies should be subjected to special surveillance, in order to obviate the possibility of the cows suffering from contagious disease capable of transmission to man being utilised in respect of the milk supply.

I would, lastly, ask your attention to the action of the Medico-Chirurgical Society of Edinburgh. On the 15th of February, 1888, Principal T. Walley read an elaborate paper on "Animal Tuberculosis in relation to Consumption in Man." A prolonged discussion followed, and it was agreed to send forward two of their number to give evidence before the Departmental Committee of the Privy Council, who were taking evidence on pleuro-pneumonia and tuberculosis. As the evidence is given in a full synopsis in the January and February numbers of the *Edinburgh Medical Journal*, I shall merely say that it all tended to prove that the tuberculosis of bovines and the tuberculosis of the human subject were identical, and caused by the bacillus tuberculosis; that there was a strong probability of the disease being communicated by milk and by

inoculation; necessity for dairies being inspected regularly, and cows certified by competent authorities as fit to give milk, and the hygiene of the byre being attended to; and the necessity for sputa and the excretions of animals being disinfected.

The evidence on tuberculosis is now enormous. In conclusion, I would merely remind you of the results of the "Collective Investigation Record," issued in 1883, on the communicability of phthisis—261 affirmative, 39 doubtful, 105 negative, and 673 simple negative (no expression of opinion).

The grounds, therefore, on which I base hopes that tuberculosis may become a thing of the past are—That the pathology (that much-despised department of medical education) is now known; that light is being shed on the way in which the disease is in all probability spread; and that having discovered our enemy, the arms with which he fights, and the roads by which he travels, we may intercept him before he actually invades us; for most assuredly, if he get possession of certain of our strongholds we shall be overcome—at the best, left permanently disabled.

The first movement in the attack I would advocate is that of the Congress on Tuberculosis, held at Paris, as quoted above.

ABORTION.

Dr. Gray (*Glasgow Medical Journal*, March, 1889) reports a very interesting case of a lady who had an abortion of about six weeks, and seven months after was confined of a child at full term. She had a "uterus septus bilocularis," and the full term child belonged to the left division. There had evidently been a twin pregnancy, the right horn aborting at six weeks, and the left going on to full term.

TRAUMATIC TETANUS.

Dr. Hunt, of the Pennsylvania Hospital, describes (*Philadelphia Medical Times*, March 1st, 1889) a case of diabetes, apparently resulting from a blow received on the abdomen from the handle of a baker's cart. The urine had a sp. grav. of 1032, and contained much sugar. There was no injury to the heart.

UNUNITED FRACTURE.

Dr. Deaver reports (*Philadelphia Medical Times*, March 1st, 1889) a case of ununited fracture of radius of four months' standing, associated with loss of power and pain on movement, treated by exploratory incision, chiselling off a large mass of callus located in the interosseous space, and resetting the fracture. The result was satisfactory, no pus formed, and movement was completely restored.

CLINICAL RECORDS.

Ataxic Paraplegia.[a] By Edgar Du Cane.

We have had a succession of cases in the Whitworth Hospital during the past three sessions illustrating most of the common spinal lesions, but the case which I bring before your notice in this paper is somewhat a "*rara avis*" of its kind, and the disease is one which has but comparatively recently been recognised and described. Although its clinical features present some varieties, and may approach those of each of its constituent forms of disease, yet, in the majority of cases, the symptoms are uniform and sufficiently characteristic to justify the distinction of the disease and its separate description.

P. L., aged twenty-five, single, labourer, was admitted to the Whitworth Hospital on October 1st, 1888. He is a moderate drinker, and looks healthy and well nourished. He has never had syphilis, and there is no suggestion of a neuropathic tendency in his family history. His present illness began two and a half years ago, and he attributes it to getting wet through and drying himself, with his clothes on, before the fire. Three months after this rash act he noticed his legs gradually becoming weak. He could not walk a long distance, and he became tired sooner than formerly; he also had pain at the bottom of the back. Twelve months ago he was treated for five months in the Dunshaughlin Hospital, Co. Meath, for paralysis.

Present condition (Oct. 1st).—He has a pain located in the lumbo-sacral region. He never suffered from "lightning" pains, neither has he had any vesical, gastric, or rectal crises. He has weakness of both legs, with a certain amount of stiffness in the right knee. He is unable to stand with the feet together and his eyes closed (static ataxy). Knee-jerk exaggerated in right leg; entirely absent in left leg. Ankle clonus in both feet; most marked, however, in the right. Abdominal reflexes absent. Sensation not markedly impaired. Pupil responds both to light and distance (absence of Argyll Robertson pupil). There is no nystagmus.

On Nov. 29th the following additional notes were made:—No muscular atrophy, except such as would be accounted for by the long sojourn in bed. Both legs are rigid, but there is a marked difference in the symptoms exhibited by each.

[a] Read before the Carmichael College Medical Science Association, March 19th, 1889.

Right Leg.—Knee-jerk exaggerated; rectus clonus well marked; ankle clonus well developed; all superficial and deep reflexes exaggerated; sensation normal. Gait spastic, toe comes to the ground first; foot drags, and shakes from clonus when it stops; the leg is hauled forward with visible effort.

Left Leg.—Knee-jerk absent; rectus clonus absent; ankle clonus slightly developed; sensation somewhat impaired. Gait distinctly ataxic, the heel is brought suddenly to the ground.

He is unable to place heel and toe together on any level surface. When, sitting on the edge of the bed, he puts his toes to the ground and rests on them, clonus is constant and rhythmical.

On Feb. 19th his condition was much the same. The sacral pain was less severe. The legs quite rigid with morning exacerbations of rigidity. Visceral crises absent. No undue frequency of pulse.

The short notes I have just read seem those of a patient suffering from a combination of spastic paraplegia (lateral sclerosis) and locomotor ataxy, and so the term ataxic paraplegia seems the most accurate clinical designation for this disease, and as such observations have been recorded by Prevost, Westphal, Babesieu, and others.

Ætiology.—Males suffer more frequently than females. The age is generallybetween twenty-five and forty. A neurotic tendency has been occasionally noticed. A history of syphilis is as rare in this disease as it is frequent in pure "tabes dorsalis." The disease may follow sexual excess, or follow concussion of the spine. Exposure to cold has been given as a cause as in a case of Dr. Gowers, where a young lady after a season of balls and dances at which, when heated, she would habitually sit at open windows and often slept in clothes saturated with perspiration presented symptoms of the disease. The general ætiology, therefore, resembles spastic paraplegia.

Symptoms.—The onset is slow and gradual, two or three years passing before walking power is seriously impaired. The legs are the first to suffer, and the symptoms may be limited to them as in the case I record. There is slow and simultaneous development of weakness and defect of co-ordination. Frequently one leg is weaker than the other. The gait is unsteady, and static ataxy is usually present.

The sensory symptoms present marked contrast to those of "tabes." Thus "lightning pains" are always absent. A dull pain in the sacral region is sufficiently frequent to deserve special note. Loss of sensation and hyperæsthesia equally rare. The most striking difference, however, from "tabes" is in the myotatic irritability, which in most cases is greatly increased. The knee-jerk is quick and extensive, and there is usually distinct rectus clonus. Foot clonus (ankle clonus) is usually present. This myotatic excess usually persists throughout the whole course of the disease, whereas in ordinary "tabes" however slight the

lesion, the knee-jerk is invariably lost. The Argyll Robertson pupil is not generally present. The external ocular muscles are normal, and there is no nystagmus. As the disease increases, weakness becomes more and more marked, but sensation usually remains unimpaired. Gowers remarks that sensation may be impaired, and that the knee-jerk may be lost. The increased myotatic irritability continues, and stiffness and rigidity develop as its consequence. There is little tendency towards death, the chief tendency being from the accidents common to all spinal diseases—viz., kidney disease and bed sores.

Pathological Anatomy.—In all cases examined, there was sclerosis of both the lateral and posterior columns. The posterior sclerosis differs from that of "tabes," in that it is *not* more intense (often it is less intense) in the lumbar than in the dorsal region.

In a case published by Mr. J. Hopkins[a] the sclerosis was considerable in the dorsal region, and at the junction of this with the lumbar region, while the posterior columns in the lumbar region were free from sclerosis. Moreover, it does not present that special intensity in the root zone of the postero-external column, which characterises the lesion of "tabes." The degeneration in the lateral columns is variable in extent and position, and is often not systemic in character. The whole pyramidal tract alone was observed sclerosed in one or two cases, but more often the sclerosis, while intense in the pyramidal tracts, also extended in front of this into the mixed zone of the lateral columns. The lateral limiting layer may also be invaded, but the direct cerebellar tract often escapes.

Pathology.—This double lesion in the posterior and lateral columns explains the two sets of symptoms. The inco-ordination is doubtless due to the lesion in the posterior column, but while in "tabes" the ataxy is chiefly due to the disease of the sensory muscle nerves, in ataxic paraplegia, judging by the general integrity of sensation, and by the preservation of myotatic irritability and ultimate spasm, the sensory nerves escape, and amongst them those of the muscles.

The diagnosis from spastic paraplegia (lateral sclerosis) depends on the presence of inco-ordination, as Gowers remarks—"Ataxic paraplegia is spastic paraplegia *plus* inco-ordination."

Hereditary ataxy (Friedreich's disease) is distinguished by its presence in several members of the same family, by common loss of knee jerk, and by presence of nystagmus and some impairment of articulation. The prognosis is unfavourable, but the progress is slow and danger to life small.

As to treatment, drugs are but of little avail. Arsenic has been given with some effect. Bromide of potassium may lessen the spasm. Nux vomica must be given, if at all, in small doses, as it tends to increase the

[a] See "Brain." October, 1883, page 383.

spasm. Massage, combined with Turkish baths, may have some effect. Faradaism and all other painful applications are harmful, stimulating further the already excessive excitability of the reflex centres. For the few pathological observations published, I must refer you to Prevost, Arch. de Physiologie T., IV.; Pierret, *ibid;* Babesieu, Virchow's Archiv. Bd. 76; Kahler and Pick, Arch. fur Psychiatrie Bd. VIII.; and Westphal, *ibid* Bd. VIII. and X.

EXALGIN.

The aromatic series have given another analgesic: ortho-methyl-acetanilide, which, from its physiological effects, Dr. Dujardin-Beaumetz has named Exalgin, from ἐξ, out of, and ἄλγος, pain. Exalgin occurs in needles or in large white tablets, according as it is obtained by crystallisation or from the mass after distillation. It is slightly soluble in cold water, more soluble in hot water, and very soluble in water containing a little alcohol. The analgesic effect of the chemical is produced by doses varying from three to seven grains. The effect is said to be very marked, and in all forms of neuralgia, including the visceral variety, is thought to be superior to that of antipyrin. Its toxic dose is ascertained to be 0·46 gramme, per kilogramme of body-weight of the animal, the phenomena being trembling and paralysis of the respiratory organs. Exalgin also possesses antiseptic and anti-thermic properties; but its anodyne action appears to be the dominant one.—*Pharmaceutical Journal.*

ASPIRATION OF A PULMONARY ABSCESS.

Mr. Delpratt Harris (*British Medical Journal*, May 4) reports a case of successful aspiration of pulmonary abscess in a gentleman, aged thirty-three, who had been for a considerable time suffering from a renal fistula. [Evacuation of pulmonary abscesses is one of the oldest operations in surgery, and even in the mediæval ages held its own: Boerhaave performed it, and Van Swieten laid it down as an aphorism that pulmonary abscesses should be treated surgically.—Ed.]

PREGNANCY IN A BICORNATE UTERUS.

At a meeting of the Border Counties Branch of the British Medical Association on the 11th of April, 1889, Dr. Cullen read a case of pregnancy in a uterus bicornis. The woman had regularly menstruated up to date, and consequently did not believe she was pregnant. Six weeks after she was first seen she was delivered of a seventh months' child. [Neale (*Medical Digest*, 1110–14) refers to several cases in which this uterine malformation existed.—Ed.]

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C P. F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, May 18, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	April 27.	May 4.	May 11.	May 18.		April 27.	May 4.	May 11.	May 18.
Armagh -	31·0	0·0	0·0	0·0	Limerick -	27·0	37·8	39·1	37·8
Belfast -	27·7	27·7	28·6	22·0	Lisburn -	24·2	4·8	14·5	14·5
Cork -	28·6	28·6	19·5	13·0	Londonderry	26·7	25·0	39·2	12·5
Drogheda	25·4	25·4	38·1	8·5	Lurgan -	20·5	41·0	35·9	20·5
Dublin -	26·9	25·8	26·4	24·5	Newry -	17·6	24·6	17·6	7·0
Dundalk -	30·6	17·5	17·5	4·4	Sligo -	24·1	9·6	14·4	24·1
Galway -	30·3	10·1	26·9	16·8	Waterford -	20·8	25·5	32·4	27·8
Kilkenny	46·5	29·6	12·7	50·7	Wexford -	29·9	34·2	17·1	4·3

In the week ending Saturday, April 27, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 17·6), was equal to an average annual death-rate of 19·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·7 per 1,000. In Glasgow the rate was 28·3, and in Edinburgh it was 12·9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 27·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in Galway, Newry, Drogheda, Wexford, Dundalk, and Armagh, to 14·4 in Sligo. The 5 deaths from all causes registered in the last-named district comprise 3 from whooping-cough. Among the 122 deaths from all causes registered in Belfast are 1 from typhus, 2 from simple continued

fever, 1 from enteric fever, and 4 from diarrhœa. The 44 deaths in Cork comprise 1 from scarlatina, 1 from typhus, 5 from whooping-cough, and 1 from diarrhœa; and the 20 deaths in Limerick comprise 1 from typhus and 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 207—97 boys and 110 girls; and the deaths to 191—102 males and 89 females.

The deaths, which are 17 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the estimated population. Omitting the deaths (9 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·9 per 1,000. During the first seventeen weeks of the current year the death-rate averaged 28·0, and was 5·4 below the mean rate in the corresponding period of the ten years 1879–88.

Twenty-four deaths from zymotic diseases were registered, being 11 over the low number for the preceding week, but 3 under the average for the seventeenth week of the last ten years. They comprise 2 from measles, 1 from scarlet fever (scarlatina), 1 from typhus, 1 from whooping-cough, 5 from enteric fever, 3 from diarrhœa, 1 from erysipelas, &c.

Ten cases of measles were admitted to hospital, being 1 in excess of the admissions for the preceding week, but 7 under the number for the week ended April 13. Sixteen measles patients were discharged, and 41 remained under treatment on Saturday, being 6 under the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital is 8, being 1 under the number for the preceding week, and 5 under that for the week ended April 13. Ten patients were discharged, 3 died, and 41 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, April 20.

The hospital admissions for the week include also 4 cases of scarlatina and 3 of typhus, against 8 cases of the former and 1 case of the latter disease admitted during the preceding week; 30 cases of scarlatina and 8 of typhus remained under treatment in hospital on Saturday.

Thirty-one deaths from diseases of the respiratory system were registered, being 13 over the number for the preceding week, but 9 under the average for the seventeenth week of the last ten years. They comprise 23 from bronchitis and 4 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 4, the mortality in twenty-eight large English towns, including London (in which the rate was 16·6), was equal to an average annual death-rate of 19·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was

22·3 per 1,000. In Glasgow the rate was 28·6, and in Edinburgh it was 17·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in Galway, Drogheda, Dundalk, Lisburn, Lurgan, and Armagh, to 14·0 in Newry. The 7 deaths from all causes registered in the last-named district comprise 3 from whooping-cough and 1 from diarrhœa. Among the 122 deaths from all causes registered in Belfast are 1 from diphtheria, 2 from simple continued and ill-defined fever, 3 from enteric fever, and 3 from diarrhœa. The 44 deaths in Cork comprise 3 from whooping-cough and 1 from enteric fever. Among the 28 deaths in Limerick are 2 from scarlatina, and 1 from whooping-cough. The 11 deaths in Waterford comprise 1 each from diphtheria and diarrhœa. The only deaths recorded in Sligo are 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 225—121 boys and 104 girls; and the deaths to 177—82 males and 95 females.

The deaths, which are 22 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·1 in every 1,000 of the estimated population. Omitting the deaths (2 in number) of persons admitted into public institutions from localities outside the district, the rate was 25·8 per 1,000. During the first eighteen weeks of the current year the death-rate averaged 27·9, and was 5·3 below the mean rate in the corresponding period of the ten years 1879–88.

The number of deaths from zymotic diseases registered is 16, being a decline of 8 as compared with the number for the preceding week, and also 8 below the average for the eighteenth week of the last ten years. The 16 deaths comprise 3 from measles, 1 from scarlet fever (scarlatina), 2 from typhus, 1 from whooping-cough, 3 from enteric fever, 1 from diarrhœa, 1 from erysipelas, &c.

During the five weeks ending April 27, 79 cases of measles were admitted to hospital, the lowest number for any of those weeks being 9, but during the week now under consideration no cases of the disease were received. Thirteen measles patients were discharged, 3 died, and 25 remained under treatment on Saturday.

Ten cases of enteric fever were admitted to hospital during the week, being 2 over the admissions for the preceding week. Ten patients were discharged, 2 died, and 39 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, April 27.

Only 2 cases of scarlatina and 2 of typhus were admitted, against 4 cases of the former and 3 of the latter disease admitted during the

preceding week; 28 cases of scarlatina and 8 of typhus remained under treatment in hospital on Saturday.

Forty-two deaths from diseases of the respiratory system were registered, being equal to the average for the corresponding week of the last ten years and 11 over the number for the week ended April 27. They comprise 22 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 11, the mortality in twenty-eight large English towns, including London (in which the rate was 15·5), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·2 per 1,000. In Glasgow the rate was 24·9, and in Edinburgh it was 17·5.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 26·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in Waterford, Newry, Wexford, Dundalk, Sligo, Lurgan, and Armagh, to 9·7 in Lisburn. The 3 deaths from all causes registered in the last-named district comprise 1 each from enteric fever and diarrhœa. Among the 126 deaths from all causes registered in Belfast are 1 from whooping-cough, 3 from simple continued fever, 2 from enteric fever, and 3 from diarrhœa. The 29 deaths in Limerick comprise 1 from scarlatina and 1 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 189—103 boys and 86 girls; and the deaths to 185—90 males and 95 females.

The deaths, which are 14 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·3 in every 1,000 of the estimated population. Omitting the deaths (6 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·4 per 1,000. During the first nineteen weeks of the current year the death-rate averaged 27·8, and was 5·2 below the mean rate in the corresponding period of the ten years 1879–88.

Only 15 deaths from zymotic diseases were registered during the week, being 12 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended May 4. They comprise 2 from scarlet fever (scarlatina), 3 from whooping-cough, 3 from enteric fever, 1 from dysentery, 1 from erysipelas, &c.

The average weekly number of cases of measles admitted to hospital during the five weeks ending April 27 was 16. In the week ending May 4, no cases of the disease were received, but the admissions for this week amounted to 18. Twelve measles patients were discharged during last

week, and 31 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital during this week is 9, being 1 under the admissions for the preceding week; 4 patients were discharged, 1 died, and 43 remained under treatment on Saturday, being 4 over the number in hospital on Saturday, May 4.

Six cases of scarlatina and 3 of typhus were admitted to hospital, against 2 cases of each of these diseases admitted during the preceding week: 27 cases of the former and 6 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 31 in the week ended April 27 to 42 in the following week, fell this week to 37, or 2 under the average for the corresponding week of the last ten years. The 37 deaths comprise 19 from bronchitis, and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 18, the mortality in twenty-eight large English towns, including London (in which the rate was 14·8), was equal to an average annual death-rate of 17·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·5 per 1,000. In Glasgow the rate was 24·9, and in Edinburgh it was 17·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eight of the districts to 9 6 in Sligo—the 5 deaths from all causes registered in that district comprising 1 each from typhus and whooping cough. Among the 97 deaths from all causes registered in Belfast are 2 from whooping-cough and 4 from enteric fever. The 20 deaths in Cork comprise 2 from whooping-cough. The 28 deaths in Limerick comprise 1 from scarlatina, 1 from typhus, and 3 from whooping-cough. Of the 12 deaths in Waterford 2 were from diarrhœa; and the 12 deaths in Kilkenny comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 234—126 boys and 108 girls; and the deaths to 170—88 males and 82 females.

The deaths, which are 15 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·1 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 24·5 per 1,000. During the first twenty weeks of the current year the death-rate averaged 27·7, and was 5·0 below the mean rate in the corresponding period of the ten years 1879–88.

Seventeen deaths from zymotic diseases were registered, being 2 over the low number for the preceding week, but 10 under the average for the twentieth week of the last ten years. They comprise 2 from measles, 1 from scarlet fever (scarlatina), 1 from typhus, 4 from whooping-cough, 2 from simple continued and ill-defined fever, 2 from enteric fever, 1 from diarrhœa, &c.

Eighteen cases of measles were admitted to hospital, being equal to the admissions for the preceding week. Eight measles patients were discharged, 1 died, and 40 remained under treatment on Saturday, being 9 over the number in hospital on Saturday, May 11.

The number of cases of enteric fever admitted to hospital is 6, being a decline of 3 as compared with the admissions for the preceding week. Fifteen patients were discharged, 1 died, and 33 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 4 cases of scarlatina and 3 of typhus. In the preceding week 6 cases of the former and 3 of the latter disease were admitted. Twenty-seven cases of scarlatina and 9 of typhus remained under treatment in hospital on Saturday.

Only 25 deaths from diseases of the respiratory system were registered, being 10 below the average for the corresponding week of the last ten years, and 12 under the number for the week ended May 11. They comprise 17 from bronchitis and 6 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of May, 1889.

Mean Height of Barometer, - - -	29·790 inches
Maximal Height of Barometer (on 20th, at 9 p.m.),	30·113 „
Minimal Height of Barometer (on 28th, at 3 p.m.),	29·440 „
Mean Dry-bulb Temperature, - - -	54·1°.
Mean Wet-bulb Temperature, - - -	51·2°.
Mean Dew-point Temperature, - - -	48·3°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·340 inch.
Mean Humidity, - - - - -	81·7 per cent.
Highest Temperature in Shade (on 21st), - -	72·5°.
Lowest Temperature in Shade (on 11th), - -	40·8°.
Lowest Temperature on Grass (Radiation) (on 11th),	31·9°
Mean Amount of Cloud, - - - -	65·4 per cent.
Rainfall (on 17 days), - - - -	2·131 inches.
Greatest Daily Rainfall (on 5th), - - -	·509 inch.
General Directions of Wind, - - -	S., S.E., E.

Remarks.

This was a very favourable month—singularly free from parching easterly winds, with a high mean temperature, and genial rainfall. The atmosphere was generally in a quiet state, no deep depressions and no gales being observed. In Dublin calms were of frequent occurrence, and in consequence morning fogs formed over the city.

In Dublin the mean temperature (54·6°) was much above the average (51·9°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 54·1°. In the twenty-four years ending with 1888, May was coldest in 1869 (M. T. = 48·2°) in 1885 (M. T. = 48·7°), and in 1879 (the "cold year") M. T. = 48·8°). It was warmest in 1868 (the "warm year") (M. T. = 55·8°) and 1875 (M. T. = 54·9°). In 1886, the M. T. was 50·5°, in 1887 it was 51·8°, and in 1888 it was 52·5°.

The mean height of the barometer was 29·790 inches or 0·206 inch below the average value for May—namely, 29·996 inches. The mercury rose to 30·113 inches at 9 p.m. of the 20th, and fell to 29·440 inches at 3 p.m. of the 28th. The observed range of atmospherical pressure was, therefore, only 0·673 of an inch—that is, a little less than seven-tenths of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 54·1°, or 8·5° above the value for April, 1889; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) =*Mean Temp.*—from the means of the daily maxima and minima was 53·4°, or 2·5° above the average mean temperature for May, calculated in the same way, in the twenty years, 1865–84, inclusive (50·9°). The arithmetical mean of the maximal and minimal readings was 54·6°, compared with a twenty-three years' average of 51·9°. On the 21st, the thermometer in the screen rose to 72·5°—wind E.; on the 11th the temperature fell to 40·8°—wind calm. The minimum on the grass was 31·9° on this same date. The rainfall amounted to 2·131 inches, distributed over 17 days. The average rainfall for May in the twenty-three years, 1865–87, inclusive, was 2·072 inches, and the average number of rainy days was 15·5. The rainfall and the rainy days, therefore, were somewhat above the average. In 1886 the rainfall in May was very large—5·472 inches on 21 days; in 1869 also 5·414 inches fell on 19 days. On the other hand, in 1871, only ·378 of an inch was measured on 9 days; in 1876 only ·798 of an inch fell on 6 days; in 1887 only ·882 of an inch fell on 10 days; and in 1888 only ·978 of an inch on 11 days.

There were solar haloes on the 16th and 20th. The atmosphere was foggy on the 5th, 6th, 11th, 13th, 14th, 18th, 19th, 21st, and early morning of the 27th. High winds were noted on only 4 days, attaining the force of a gale on not one occasion. Hail occurred on the 31st. The only heavy falls of rain were on the 5th (·509 inch), and on the 12th (·453 inch). There were no electrical disturbances in Dublin.

The first four days were changeable, with a damp atmosphere and cloudy sky on Friday and Saturday, the 3rd and 4th.

During the week ended Saturday, the 11th, the weather was again changeable, with some heavy rainfalls in Ireland, but temperature showed a decided advance. Sunday and Thursday were very wet days in Dublin, while Monday, Tuesday, and Saturday were equally fine. Rain fell for many hours on Sunday, and in the evening a severe thunderstorm occurred in Ulster. A dense vapour fog next morning gave place to brilliant sunshine. Then came two tolerably fine, but not settled, days—to be followed by a very wet day (Thursday). Friday was at first squally with a fine drizzle, but the afternoon proved fair, and the following night was cold. Saturday was a very fine day, with lofty cirrus from S.E. In Dublin the mean height of the barometer was 29·763 inches—pressure receding to 29·548 inches at 9 p.m. of Thursday (wind E.S.E.), and increasing to 29·912 inches at 9 p.m. of Saturday (wind, light from E.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 52·3°. The mean of the daily maxima and minima in the screen was 53·2°. On Tuesday the shade thermometer rose to 62·6° (wind, W.S.W.). This was the first occasion this season upon which temperature in Dublin exceeded 60° in the shade. On Saturday the minimum in the shade was 40·8°, and on the grass it was 31·9° (wind, calm). Rain was measured on four days, the total amount being 1·031 inches, of which ·509 inch was registered on Sunday (wind, S. to N.W.). Very high temperatures, (70°—77°), were recorded in central and eastern England during this week. On Friday an area of low pressure approached England from Germany, causing a heavy rainfall.

Cloudy, dull, quiet weather prevailed during the period from the 12th to the 18th inclusive. At the beginning of the week a cyclone, in which the gradients, however, were not steep, was found with its centre over Norfolk, whence it had travelled slowly from Germany. Much rain fell in eastern and central England in connection with this system, and even in Dublin ·453 inch of rain was measured on Monday morning. This depression gradually filled up and dispersed, when atmospherical pressure became so uniform over Western Europe that on Tuesday morning (the 14th) the barometer readings over the whole of our islands, the North Sea, the Netherlands, Denmark, the South of Scandinavia, France and Germany were all within one-tenth of an inch of each other. Consequently, very light, variable winds and quiet weather prevailed. On the afternoon of this day a severe thunderstorm occurred in the north-east of Ireland and south-west of Scotland. A solar halo appeared in Dublin on Thursday afternoon and Friday proved a damp, dropping day. Saturday was at first cloudy, but afterwards bright and warm. In Dublin the mean height of the barometer was 29·919 inches, pressure ranging only from 29 780 inches at 9 p.m. of Tuesday (wind, calm), to 29·997 inches at 9

a.m. of Friday (wind, E.S.E., light). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 53·1°, while the mean daily highest and lowest readings of the screened thermometers were 53·2°. The highest shade temperature was 62·6° on Saturday (wind, variable); the lowest was 41·9° on Tuesday (wind, E.N.E.). Rain fell on three days to the amount of ·504 inch—the heaviest rainfall in 24 hours being ·453 inch on Sunday (wind, W.S.W. to N.W.)

Favourable weather held throughout the week ending Saturday, the 25th, in Dublin, where only light showers fell on Friday. Until that day temperature ruled unusually high for the time of year—the daily maxima in the screen being 66·3°, 69·6°, 72·5°, 68·6°, and 67·5° respectively. On Wednesday a gradual fall of the barometer set in and continued until Friday morning, when pressure fell to 29·5 inches in the Hebrides and 29·6 inches at Roche's Point, Co. Cork. On Thursday severe thunderstorms were reported from the east of England, and at night heavy rain set in over the north and north-west of Ireland. On this day temperature rose to 82° in London and to 81° at Loughborough and Cambridge. Early on Friday a rapid fall of temperature occurred in Ireland, so that in Dublin the thermometer did not exceed 59·0° on this day, while it fell to 42·1° in the screen and to 35·9° on the grass during the ensuing night. The mean height of the barometer was 29·882 inches—pressure rising to 30·113 inches at 9 p.m. of Monday (wind, E.), and falling to 29·584 inches at 7 a.m. of Friday (wind, S.W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58·3, while the mean of the highest and lowest daily readings was 58·5°. The screened thermometers rose to 72·5° on Tuesday (wind E.N.E.) and fell to 42·1° on Saturday (wind, N.N.W.). Rain fell on Friday to the amount of only ·010 inch.

Throughout the closing period (Sunday, 26th, to Friday, 31st) much less settled weather prevailed. At first the barometer was lowest over the Continent, and large quantities of rain fell in England, while the weather was comparatively fine in Ireland. From Tuesday, the 28th, however, the lowest pressures were found off the northwest and west of Ireland, so that fresh to strong southerly (S.E. to S.W.) winds and frequent showers were experienced. Thunder and lightning accompanied the showers in several places, but—as often happens—Dublin escaped the electrical disturbances. During this period, the barometer ranged between 29·832 inches at 9 a.m. of Monday (wind, E.), and 29·440 inches at 3 p.m. of Tuesday (wind, S.) On Monday, the 27th, the thermometer rose to 64·6° in the shade (wind, E.S.E.), the minimum during the previous night having been 44·1°.

During the month the thermometer in the screen did not fall below 40·8° (on the 11th), and on only one night was a temperature of 32° or less recorded on the grass. The mean minimal temperature on the

grass was 42·4°, compared with 37·5° in May, 1888, and 37·9° in May, 1887.

The rainfall in Dublin during the five months ending May 31st has amounted to 10·476 inches on 91 days, compared with 9·068 inches on 69 days during the same period in 1888, 6·489 inches on 62 days in 1887, and a 23 years' average of 10·560 inches, on 81·7 days.

At Greystones, Co. Wicklow, the rainfall in May, 1889, was 3·13 inches, distributed over only 10 days. Of this quantity ·61 inch fell on the 3rd, ·47 inch on the 4th, and ·39 inch on the 28th. Since January 1st, 13·11 inches of rain have fallen at Greystones, on, however, only 51 days.

PERISCOPE.

INVERSION OF THE WOMB.

Dr. E. J. Beall, North Worth, Texas, reports (*Medical and Surgical Reporter, Philadelphia*, Vol. LX., No. 1) the successful removal of a fibro-cystic tumour, seven pounds in weight, by inverting the womb and then excising the tumour. The patient, aged thirty-seven years, made a good recovery. "No fever or other untoward circumstance retarded a rapid restoration to health."

RESORCIN IN WHOOPING-COUGH.

Dr. Guerra Y. Estafe (*New Orleans Medical and Surgical Journal*) recommends the local application of a ten per cent. solution of resorcin to the larynx and pharynx as the best treatment for whooping-cough.—*Phil. Med. and Surg Rep.*, Vol. LX., No. 1.

LEECHING.

At a meeting of the Philadelphia County Medical Society, Dr. John H. Packard, when speaking of the treatment of peritonitis, declared that he has often found that the application of a dozen of leeches to the abdomen seemed to avert a threatened attack.—*Phil. Med. and Surg. Rep.*, Vol. LX., No. 1. [Thus we find old methods of treatment are from time to time revived.—Ed.]

MEDIÆVAL REMEDIES—UNICORN'S HORN.

Amongst the many remedies of the past none was held in greater esteem than unicorn's horn, which Bullein did much to discourage. It was one of the most expensive remedies. Andrea Rocci, a Florentine physician, mentions that the apothecaries of Florence charged £24 an ounce for the remedy sold as unicorn's horn.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Instruments for Rectal Medication.

We have received from Messrs. Burroughs & Wellcome specimens of Dr. Ward Cousins' instruments for rectal medication. They consist (1) of an ointment introducer, which differs from those formerly in use by having the nozzle for introduction curved, and in having the ointment extruded by pressure of a piston instead of by screw power, as formerly; (2) of an instrument for injecting glycerine and other fluids. Both instruments are nicely finished, and will no doubt answer their purposes admirably; but they differ so slightly from similar patterns hitherto in use for the same purposes, that any detailed account of them is unnecessary.

Antiseptic Dressings.

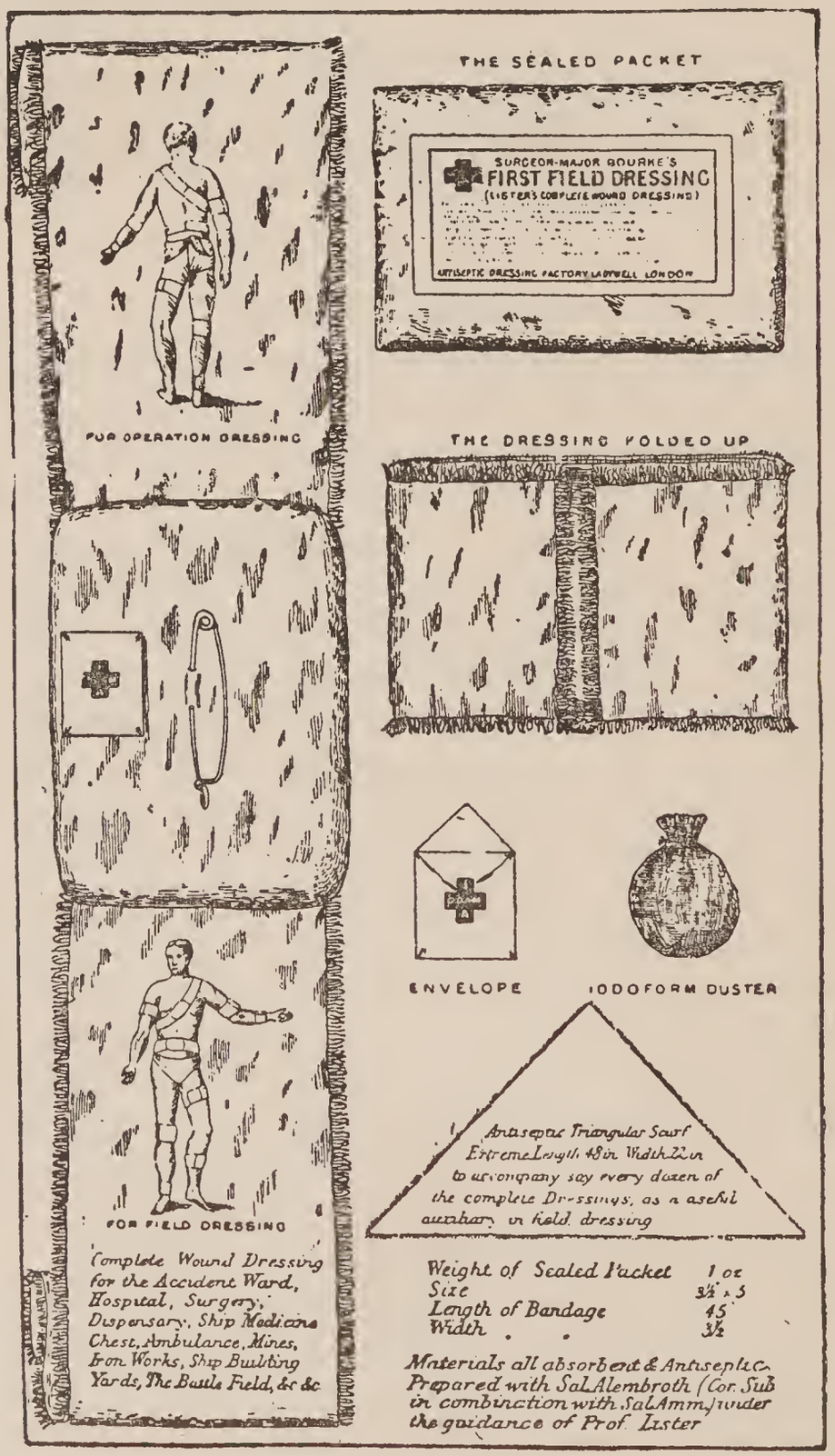
We have received from Mr. John Milne samples of the several antiseptic dressings which are now on the market, and which fully sustain the well-merited reputation which he has established for himself by the excellence of his manufacture.

During the last few years a considerable change has come over the form of antiseptic dressings employed, and we now have a selection which for neatness and elegance leaves nothing to be desired; while the well-known red-cross mark of Mr. John Milne is a guarantee of accuracy of prescription and efficiency of antiseptics employed. This we have tested practically, and find that they really do contain the antiseptics indicated in sufficient quantity. We recently had brought under our notice a sample of iodoform gauze, which appeared of a rich and evenly-yellow colour; but examination proved that the colour was due to other colouring matter, and that the gauze contained only just sufficient iodoform to convey its characteristic odour. The iodoform gauze supplied by Mr. John Milne is, however, very fully and evenly charged. It is the most uniform dressing of the kind that we have as yet met with. Besides the more familiar uses of carbolic acid and sal alembroth in dressings, we notice lint and bandages charged with $1\frac{1}{2}$ per cent. sal alembroth; all the dressings charged with this drug being of a pale blue colour, for purposes of identification.

The suture materials are the usual carbolic and chromic gut and carbolised silk. That it is impossible to prepare carbolised gut which will be absolutely antiseptic in the interior, is now pretty generally admitted, and we trust that Mr. Milne will before long be able to provide us with an absorbable antiseptic suture which will be above suspicion.

We have also been favoured with samples of Surgeon-Major Ulick Bourke's "First Field Dressing," which we cannot commend too highly for military, naval, and occasional civil practice. It is a small packet, put up in parchment paper for preservation, containing a pad of alembroth wool, 2 per cent.—in gauze, 1 per cent.—attached to the middle of a short length of alembroth bandage. When provided with this, a thoroughly efficient antiseptic dressing can be immediately applied to a wound.

Appended is a miniature illustration of Surgeon-Major Bourke's sealed packet and its contents.


THE SEALED PACKET
SURGEON-MAJOR BOURKE'S
FIRST FIELD DRESSING
(LISTER'S COMPLETE WOUND DRESSING)
ANTISEPTIC DRESSING FACTORY LAYWELL LONDON
FOR OPERATION DRESSING
THE DRESSING FOLDED UP
ENVELOPE
IODOFORM DUSTER
FOR FIELD DRESSING
Antiseptic Triangular Scarf
Extreme Length 48 in. Width 22 in.
to accompany say every dozen of
the complete Dressings, as a useful
auxiliary in field dressing
Complete Wound Dressing
for the Accident Ward,
Hospital, Surgery,
Dispensary, Ship Medicine
Chest, Ambulance, Mines,
Iron Works, Ship Building
Yards, The Battle Field, &c &c
Weight of Sealed Packet 1 oz
Size 3½ x 5
Length of Bandage 45
Width 3½
Materials all absorbent & Antiseptic
Prepared with Sal Alembroth (Cor. Sub
in combination with Sal Amm.) under
the guidance of Prof. Lister

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 1, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*A Mixed Case of Typhus and Typhoid Fevers; Death and Post-mortem Examination.*[a] By C. J. NIXON, M.D., Senior Physician, Mater Misericordiæ Hospital; Fellow, Censor, and Examiner, College of Physicians, &c., &c.

THE case which I have the honour of bringing before the Academy will prove, I believe, of interest to those who are familiar with the difficulty which occasionally arises in determining during life the form of fever which exists. Whilst in the great majority of instances the origin, mode of invasion, symptoms and course of typhus and typhoid fevers render their distinction, one from the other, a matter of ease and certainty, sometimes the symptoms of the two affections are so imperfectly marked, so complex, so disposed to partake of characters peculiar to both fevers, that the differential diagnosis may be, with good reason, indefinitely postponed. We meet, moreover, with cases where the broad distinctive signs of both typhus and typhoid co-exist, and as an illustration of this the following case is recorded:—

CASE.—J. C., aged twenty-two, a grocer's assistant, was admitted into the Mater Misericordiæ Hospital on the 16th of November last. He had been seen, previously to admission, by Dr. M'Evoy, of Blackrock, who sent the patient to me as suffering from typhoid fever. He had had diarrhœa of an urgent character, and had suffered from epistaxis. When

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, December 14, 1888.

seen on the day of his admission the patient presented most of the ordinary symptoms of typhoid fever. Diarrhœa, epistaxis, a well-marked crop of raised rose-coloured spots visible over the front of the chest and abdomen, sparsely scattered, and not marked upon the posterior aspect of trunk; enlargement of the spleen determinable by palpation; moderate distension of abdomen, but no marked tenderness or gurgling over ileo-cæcal region. The physiognomy was that of enteric fever; there was a clear eye, with absence of conjunctival congestion, and the patient seemed bright and cheerful. The tongue was more thickly and uniformly coated than is usually seen in typhoid. There was some headache of a frontal character. The pulse was 100, the temperature 102·6° F., and the respirations 24 in the minute. The diagnosis made of the nature of the case was typhoid fever.

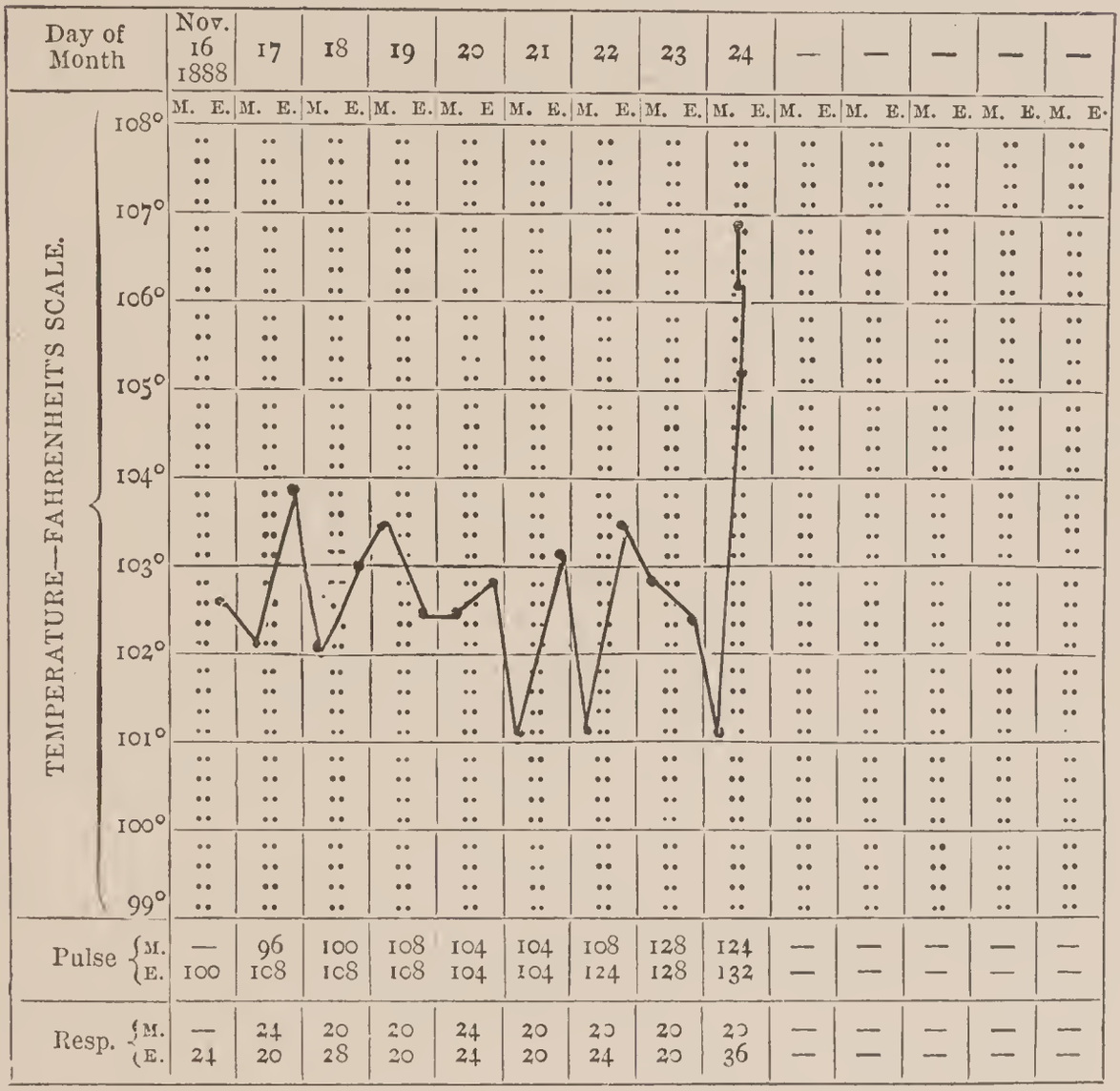
I did not see the patient on the following day, but on the day afterwards when I entered the ward the Sister in charge said to me, "The patient C. must have typhus, as he is covered with a typhus rash." I found, as the Sister stated, that the patient was profusely maculated. The spots were so thickly clustered upon the face as to resemble a case of measles, and they appeared profusely upon the trunk and parts of the extremities, especially upon the back of the wrists. The rose spots noted two days before, were still to be seen, raised and contrasting by their colour with the darker spots which surrounded them. The condition and aspect of the patient had changed considerably. He was dull and stupid; the conjunctivæ were suffused and the tongue had become dry and brown along the centre. Diarrhœa was still persistent, and the stools were perfectly fluid in consistence, but of a dark brown colour. There was a tendency to delirium of a low muttering character, but only existing at night. I confess I was somewhat puzzled as to the exact nature of the case. However, what I stated after my examination on the 18th of Nov., the third day of the patient's stay in hospital, was that the case would be considered by some physicians as a mixed case of typhoid and typhus fevers, but that I did not believe in mixed cases, because in all the instances where that diagnosis had been made, in my own experience, the course of the disease showed that one form of fever alone existed, and I was therefore inclined to regard the expression "a mixed case" as merely a *façon de parler* which helped the physician to cover what might be a legitimate incompetency on his part to make an accurate differential diagnosis. Entertaining this view and having regard to the prominent symptoms present, I looked upon the case as one purely of typhus fever, and I considered I had been in error in the diagnosis previously made of typhoid. The course the case ran was markedly that of typhus:—Increasing stupor, typhomania, maculæ changing into petechiæ, progressive dryness and brownness of the tongue, sordes upon the teeth, and signs of failure of circulation.

The chart exhibited shows the course of the disease:—

Chart of Temperature, in the Case of J. C., age 22, under the care of Dr. C. J. Nixon.

Disease, Typhoid and Typhus Fevers; *Result*, Death.

Died at 10 o'clock.



On the 24th of November, when discussing with the hospital class conditions of the tongue which are characteristic of certain forms of disease, I took them to the fever wing to demonstrate a condition of tongue that I believe is met with more frequently in typhus than in any other affection—viz., the dry brown tongue which in bad cases, towards the end of the fever, becomes retracted into a convex mass, covered with a shiny blackish cracked crust, and incapable of being protruded by the patient. But the characteristic marks of a typhus tongue no longer existed in C. It had cleaned, the rash had almost vanished, the patient appeared much brighter, and without any duskiness of the face, or conjunctival suffusion. The temperature had fallen nearly two degrees from the previous day, reaching 101·2° F., so that the appearances noted indicated that crisis was taking place, and apparently under favourable conditions. There was no complication of any serious kind, save the persistence of diarrhœa, to the extent of three to four stools in

the twenty-four hours. The case, to all appearances, was progressing satisfactorily, and there were reasonable grounds for a favourable prognosis.

At 6 o'clock on the evening of this day, the ninth of the patient's stay in hospital, the twelfth, as far as we can ascertain, of the existence of the fever, the Sister in charge of the ward gave the patient his usual evening cup of milk and brandy, and he then seemed to her to be progressing satisfactorily. A quarter of an hour afterwards, in passing through the ward, she heard him groan, and on going over to the bed she found that some momentous change had taken place. He complained of a chill, and was sweating profusely. Fifteen minutes before there was no sign of sweating, but he was now as if he had been lifted out of a bath, large beads of perspiration rolling from the forehead and face. The house physician at once saw the patient, found the temperature 105° F., the pulse 102, and the respirations 36. The feet were inclined to be cold, and the pulse was weak and thready. The usual restorative treatment was adopted, and the patient, who was quite collected, expressed himself as feeling better and stronger, but the temperature steadily rose until it reached 106° F. at 8 o'clock, and 106·8° F. at 9 o'clock, when he gradually sank.

The *post-mortem* examination was carefully made sixteen hours after death by Dr. M'Weeney, Pathologist to the hospital. All the viscera were examined except the brain and spinal cord. The following appearances were noted:—

Rigor mortis well marked; dark purple discoloration of the posterior part of the trunk, and patchy discolorations of the extremities.

Muscles of a dark red colour; blood black and fluid.

Heart soft and flabby; cavities nearly empty, containing merely small quantities of discolourised fibrin.

Lungs anæmic anteriorly, especially the right; posteriorly, almost airless, and filled with dark blood, giving to both a dark purple colour.

Liver normal in appearance and size; gall bladder filled with thin bile, serous in character.

Spleen enlarged, weighing 15 ozs., and in a condition of putridity.

On opening the intestines it was found that from about the commencement of the ileum the solitary glands were considerably enlarged, and, in some, distinct evidences of infiltration were observed. Where the infiltration was marked the gland was the size of a small pea, and had a yellowish appearance. The patches of Peyer were considerably swollen, infiltrated, and the enlargement was progressively marked towards the ileo-cæcal valve. The patches presented, in a typical degree, the appearances noted in the beginning of the second week of typhoid fever. There was no trace of necrosis or ulceration.

The cæcum and upper part of colon presented spots of intense hyperæmia, which gave a bright variegated appearance to the mucous

membrane. In the centre of the spots were enlarged glands, some of which were ulcerated.

The mesenteric glands were considerably swollen.

As the case was an important one in many respects, I took some trouble in investigating the mode of development of the patient's illness. I was told by his employer that he had been complaining for some three weeks before he took seriously ill of occasional headache, and pains about his ankles. He dined, however, very well on Tuesday, the 6th of November, but his appetite seemed to fail gradually until Sunday, the 11th of November, when he expressed himself as feeling much better. Next day he was very ill, and on the day following he was seen by Dr. M'Evoy, who writes to me that when he saw the patient, he found him complaining of frontal headache, urgent diarrhœa, and some cough. His pulse was 100, full and soft; temp. 103° F. There was a good deal of tympanitic distension of the abdomen, so much so that splenic enlargement was not determinable. The ileo-cæcal region was tender on pressure, and over the abdomen six or eight spots of the usual roseolar character of typhoid were observed.

Taking the 12th of November, from the acuteness of symptoms present, as the date of invasion of typhus, it is to be noted that the typhus rash appeared upon the 17th of November, or fifth day of the disease, and that death took place on the twelfth day of the disease.

I assume there can be no doubt regarding the nature of the fever to which the patient succumbed, so the point to be determined in the case is whether the fever was a simple case of typhus with implications of the lymphatic structures in the intestines, or that the case represents a mixed form of disease—typhus grafted upon a case of typhoid fever.

The most important evidence as to intestinal implication in typhus is afforded by examination of a few rare cases referred to by Lebert as occurring in what is known as the Breslau epidemic, and the cases recorded in the well-known essay of M. Landouzy. In the former, the solitary glands and Peyer's patches, usually in the vicinity of the ileo-cæcal valve, were the seat of small isolated spherical ulcers, but there appeared to be an absence of medullary infiltration in the cases, so as to suggest that the condition found was merely an exaggerated catarrh of the intestine, such as is met with in various acute diseases.

M. Landouzy describes the breaking out of typhus in the jail at Rheims, during which 138 persons were attacked, of whom seven-

teen died. Six *post-mortem* examinations were made, but of these two only are recorded. We are told that in one case the intestines were examined by M. Chabaud and two other physicians, and pronounced to be sound; then M. Landouzy, entering and re-examining the specimen, detected what he considered evidence of incipient changes in Peyer's patches with general slight tumefaction of the solitary glands. The second case recorded would appear to be really one of typhoid fever. There are no strong points in it to support the diagnosis of typhus which was made. Typhoid deposit was found in Peyer's patches, so the case may be regarded as one of typhoid—a view that is supported by the fact that typhoid was prevalent in the prison during the time of its occurrence along with the existence of an epidemic of typhus. Even if it be thought by some that in the first case of M. Landouzy the intestinal lesions were of a sufficiently marked character, there is nothing to negative the view that the two fevers may have been present at the same time.

In examining the intestinal lesion present in the case submitted, there is a point which needs some comment. The lesions found do not correspond chronologically to the ordinary progress of a typhoid lesion. But we should not overlook the fact that, in a certain proportion of cases, the medullary infiltration of the solitary glands and Peyer's patches does not proceed to the necrotic stage, but passes through retrograde changes, until by degeneration and absorption the infiltrated parts return to their normal condition. This is probably what occurs in the mild and abortive forms of typhoid fever. Furthermore, it is not unlikely that the influence of one profound condition of general infection, such as typhus, may modify or arrest the progress of lesions produced by a second form of general infection, such as that due to the typhoid poison. We have certainly instances of acute diseases modifying the course and progress of other affections with which they are associated.

Before stating the points which influence me in regarding the case brought before you, as one of co-existing typhus and typhoid fever, I do not desire to appear in any way as impugning the view that intestinal lesions, similar in character to those met with in typhoid, occur under a variety of pathological conditions. I am, indeed, incorrect in referring to this as a view; it is much more—it is a fact repeatedly demonstrated. In scarlatina, measles, small-pox, and cholera, such lesions are met with. The condition known as *psorenterie* has been found as a frequent accompaniment

of cases of scarlatina, running a very rapid course, with high temperature. Here the lesion of the lymphatic structures in the intestines is mainly to be found in the solitary glands, the patches of Peyer being usually more distinct than normal, but not enlarged to a degree corresponding to the swelling of the solitary glands. Such, at least, was the character of the intestinal lesions in two cases of *psorenterie* observed by myself. Why there should be any distinction between the condition of the solitary and the aggravated glands, it may be difficult to understand; but we must bear in mind that Cruveilhier described a form of typhoid where the lesions were altogether confined to the solitary glands, the patches of Peyer remaining intact. This is the variety designated by him *forme pustuleuse.* I would be disposed to go even further, and admit the existence of the form of fever, described by Wunderlich and Niemeyer, where symptoms and lesions, almost identical with those of typhoid, are produced, not by a general infection, but from a purely local cause. I look upon the absence of such a fever—gastro-enteric in its nature—from our classification as an omission, inasmuch as it leaves out of consideration those cases so familiar to physicians, which stand between febricula and typhoid, to which the much-sneered-at term "gastric" is given. The mere existence of identical anatomical appearances in two cases of disease does not necessarily imply identity of disease. The symptoms and morbid anatomical appearances met with in cholera nostras may be perfectly indistinguishable from cholera asiatica. Precisely similar conditions of throat may be found in scarlatina and diphtheria, the only distinction between the two being the existence in the latter of the micro-organisms discovered by Löffler.

Without further occupying the attention of the Section, I shall briefly tabulate the points in the case submitted which afford evidence of the existence of typhoid, and which, from their prominence, led, at first, to a diagnosis of this disease:—

Typhoid physiognomy.
Rose-spots sparsely scattered over chest and abdomen.
Early enlargement of spleen.
Epistaxis, and
Persistent diarrhœa.

The *post-mortem* appearances disclose medullary infiltration of the solitary glands and patches of Peyer, progressive towards the ileo-cæcal valve, presenting the appearances described as the *plaques reticulées* and *plaques gauffrées* of Chomel, and accompanied

by swelling of the mesenteric glands. The solitary glands in the cæcum and adjoining part of the colon are found enlarged, infiltrated, and, in some parts, ulcerated. The spleen is greatly enlarged, softened, and in a condition of putrilage.

The case occurs during the marked prevalence of typhoid fever.

Add to these the weight of authority.

Liebermeister lays down: "The lesions we find in the body after death from typhoid fever are so characteristic that they of themselves make known the nature of the disease, even if we were ignorant of the symptoms and etiology of any particular case. This is not only true of more severe cases, but even in very mild cases, where death results from some complication. An experienced observer can find enough lesions to make the anatomical diagnosis."

I may also refer to the brief note of a case of typhus, complicated with diarrhœa, which appears in the Transactions of the Pathological Society of London, Vol. XVI. It bears upon mine in this way, that in typhus, with symptoms of intestinal irritation, where one would expect to find signs at least of intestinal catarrh, these signs were completely absent.

The patient, a man aged forty-four, had passed through an attack of typhus, complicated with diarrhœa. On the 13th day of the fever the pulse had fallen to 84, and the rash was fading, but the diarrhœa continued obstinate, and the patient gradually becoming weaker, died on the 18th day from the commencement of his illness.

In this case neither Peyer's patches nor the solitary glands of the ileum were enlarged, nor was there the least trace of congestion or ulceration in any part of either large or small bowel. Dr. Murchison, in his remarks upon the case, called attention to the frequency with which diarrhœa was met with as a complication of typhus; but in every instance where he had an opportunity of examining the intestines after death, no traces of any disease were observed.

Amidst the hundreds of autopsies of typhus recorded by Gerrard and Pennock, Stewart, Reid, Peacock, Jenner, Wilks, Jacquot, Godellier, Barralier, Murchison, and Lebert, not one case is recorded which corresponds, as regards the existence of intestinal lesions, with the case submitted. The observations of all those observers go to show that in typhus fever the solitary glands and Peyer's patches are more healthy in appearance than they are found in the majority of other diseases.

In arriving at the conclusion that the case brought before you illustrates the co-existence of typhus and typhoid fever, I

cannot but regard myself as fortunate in having the opportunity of demonstrating the occurrence of what is regarded by many physicians as problematical.

ART. V.—*A Contribution to the Surgery of the Abdomen.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery, St. Vincent's Hospital, Dublin.

NOW that early operative interference has become, and rightly so, the rule in abdominal lesions, it is worth considering the conditions in which such interference is not only justifiable, but imperatively demanded. The object of the present paper is to briefly review the more important diseases which are amenable to surgical treatment, and to bring under the notice of the profession an aid to diagnosis which will, I think, be found of great value, as it proved itself in many of the writer's cases, some of which are herein detailed.

Until recently operations on the gastro-intestinal tract were postponed until all hope of the patient's recovery without surgical intervention had vanished, then, as a forlorn hope, laparotomy was tolerated. Mere toleration of a procedure is not very certain to procure for its advocates that hearty assistance, that vigorous and sympathetic co-operation and countenance so necessary in bringing to a successful issue cases of grave moment.

Four causes have combined to retard our progress in this branch of surgery—1st, the dread of injury to the peritoneum; 2nd, the want of accuracy in carrying out the details of our operations; 3rd, the difficulty in determining the exact seat of intra-abdominal lesions; and 4th, the unsatisfactory condition in which patients underwent operation.

Thanks to Lister, the first barrier to our surgical advance no longer exists. The second has yielded, gradually but surely, owing to the vigorous efforts—experimental and otherwise—of Madeling, Billroth, Czerny, in Germany; M. Bouilly, Chavasse, and Verneuil, in France; Parkes, Senn, Bernays, and others, in America; and at home the pioneers have been numerous and successful.

The third obstacle is overcome at its worst by laparotomy, but still there are cases in which diagnosis is very difficult, and where laparotomy is unjustifiable or unwise until the diagnosis is certain. The cases detailed herein show how some difficulties of diagnosis may be overcome.

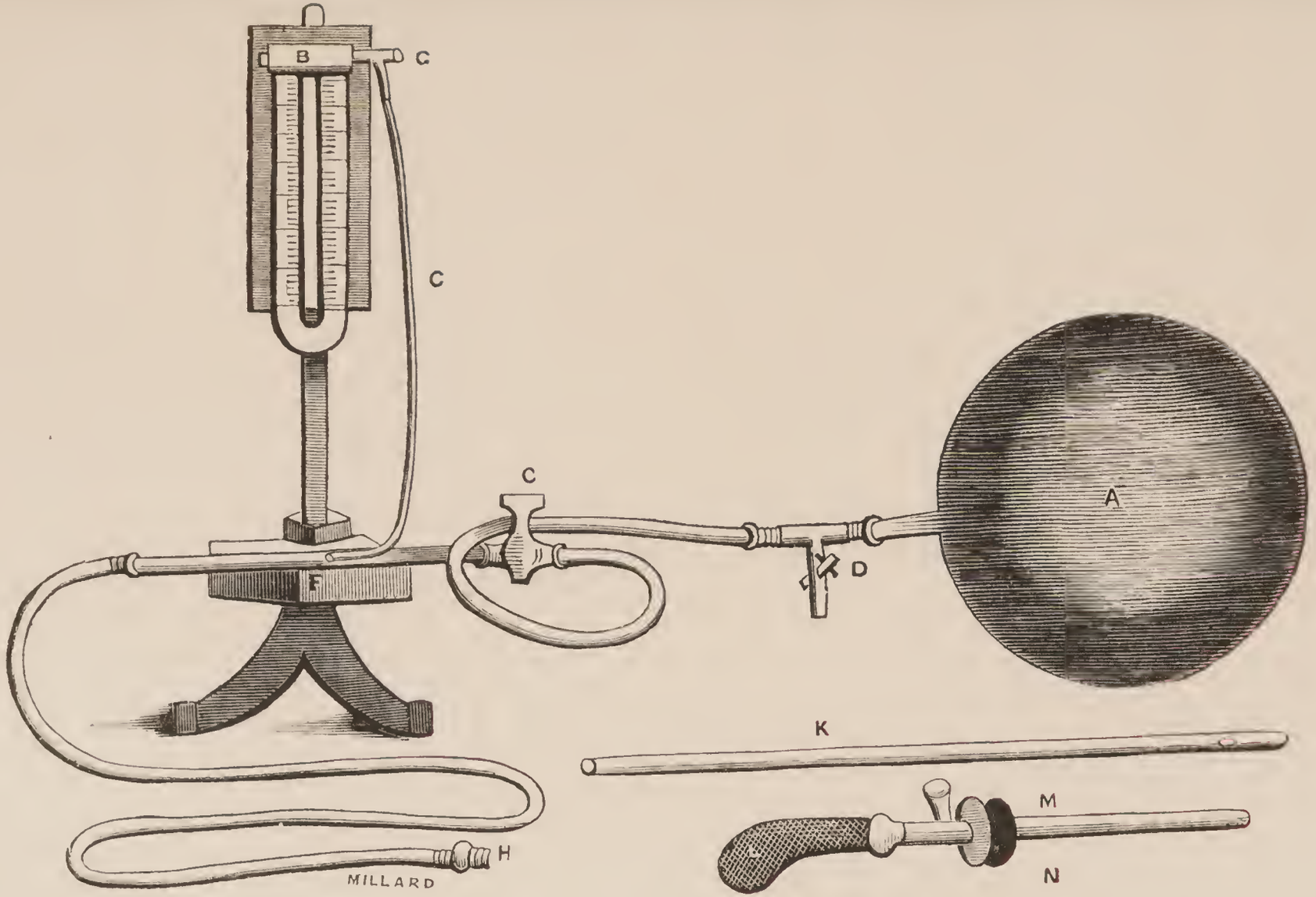
In reference to the 4th, we must admit that fewer patients die now than heretofore from unrelieved obstruction, hernial or otherwise, chiefly because the conditions likely to prove fatal are discovered earlier, and the danger of delay is more widely recognised. The same may be said—with slight reservation—of intra-abdominal affections which heretofore engaged only the attention of the physician but are now happily embraced in the modern extensions of surgery.

Before detailing my cases, I wish to call attention to the instrument here depicted, to explain its working and the conditions in which it is of value as a diagnostic aid.

The instrument consists of a strong rubber balloon, A, a T tube with stop cock, D, for filling this, a stop cock, C, for regulating the amount of air or gas passing from the reservoir A; then comes a manometer for determining the pressure used in distending the bowel, next a long connecting tube, H, for attaching to the stomach tube, of flexible rubber, K, or Lund's rectal tube N.

Inflation of Stomach.—When the reservoir A is filled the stomach tube is introduced by getting the patient to swallow it, no force of any kind being necessary—indeed, any attempt at forcing the flexible tube only delays its introduction. Through this tube the stomach is washed out with dilute boracic solution; then the connecting tube H is attached to the gastric one and the gas is allowed to enter the stomach at a pressure of $\frac{1}{4}$ lb. to the square inch—a greater pressure causes spasm. Gradually the outline of the viscus becomes marked, and the pressure becomes better borne by the patient, and with a pressure of from $\frac{1}{2}$ to 1 lb. complete dilatation may be effected. A firm œsophageal tube is closely surrounded by that passage, so that, unless the patient allows it, no escape takes place until hyperdistension is brought about. In the normal condition a sulcus marks the position of the pylorus, and here, on pressing the stomach, can be heard an intermittent rush of the air or gas through the valve.

Inflation of Intestines.—When only the large intestines are to be examined the process is rapid and simple. Lund's tube is inserted until the rubber ring M is close up to the anus, then the connecting tube is attached, and a pressure of $\frac{1}{2}$ to 1 lb. used in the dilatation. Often spasm of the colon occurs, and then a pressure of 2 lb. or so may be necessary to complete the inflation. If the stricture or perforation be in the small intestine a pressure of $2\frac{1}{2}$ or even 3 lbs. may be necessary to open the ileo-cæcal valve.



HOSPITAL
PLYMOUTH

When this event takes place the inrush of gas can be distinctly heard, and the umbilical and suprapubic regions become prominent.

The instrument above described can be made use of in determining—

1. The position of strictures of the bowel.
2. The presence, and often the position, of perforation, ulcerative or traumatic.
3. The position of tumours, and their relation to the gut.
4. The condition as to dilatation, &c., of the stomach or intestines.

I have briefly described the method of using the insufflator. I shall now detail a few of the cases in which I have found it of great value :—

Case I.—Mr. T. H., aged forty years, came under my care on January 17th, 1889, with the following symptoms. He has had colicky pain in lower abdomen, constipation with recurrent attacks of diarrhœa and copious hæmorrhage, severe pain in left lumbar region, where there is a firm tumour extending from end of tenth rib to crest of ilium. There is tenderness on pressure over this swelling, which has gradually developed within the past fourteen months. He is greatly emaciated, has quick weak pulse, foul tongue, and the evacuations are very offensive, the urine being high-coloured and loaded with lithates.

The question arose (owing to the hæmorrhage, the long-standing and persistent pain, the wasting and the scarcely changed temperature)—Is this a malignant tumour of the bowel, or is it an extra mural obstruction of inflammatory nature, causing constipation by pressure, and leading to hyperæmia of the bowel at the point compressed.

The bowel was distended by hydrogen, at a pressure of half a pound to the square inch, and on watching the gradual distension of the abdomen one could see the sigmoid flexure of the colon bulge prominently forward, then the descending colon became distinctly marked, and in a few minutes the entire colon and cæcum were distinctly seen distended. The dulness in the left lumbar region receded backwards, the rounded colon could be distinctly felt, but efforts at moving it caused pain shooting through the back, but there was no superficial tenderness ; there was no constriction at the level of the tumour, and so I decided that—

1st. The bowel was free from any marked infiltration, as no constriction appeared at the site of the tumour.

2nd. The tumour was behind the bowel, as the dulness had disappeared.

3rd. The peritoneum was not engaged, as distension of bowel removed the pain produced by pressure.

Operation.—Oblique incision as for left lumbar colotomy ; free incision of peri-nephritic tissue ; pushing forward the colon I came upon a fluctuating

spot below the left kidney; on laying this open an ounce and a half of dark and very fœtid pus was discharged. The cavity was washed out with a 1 in 40 solution of carbolic acid; a large and firm drainage tube laid in the lower angle of the wound and extending into the bottom of the abscess cavity; all other parts of the wound and cavity were plugged with iodoform gauze; the whole side was now covered with a gauze dressing and the patient removed to bed. For some days the discharges from the bowel were stained with blood, and the urine remained dark and high coloured; the temperature reached 101·6° on the evening of the fourth day after operation; on the fifth the dressings were changed, and from this date recovery was uninterrupted.

The patient has already gained twenty pounds in weight, and is in perfect health.

Case II.—J. C., aged fifty-six years, came under my care on the 5th of February, 1889, with well-marked evidence of chronic intestinal obstruction. He was pale and emaciated; had a cachectic look, and appeared very feeble. He complained of pain in the left lumbar region, and shooting inward to umbilicus. For two years he had suffered from constipation, followed by severe attacks of diarrhœa, with now and then hæmorrhage from the bowel.

On examining the abdomen I found the walls very lax, the skin hanging in folds, as if rapid wasting had occurred; the region of the colon was marked by a rounded prominence, resonant and elastic; at the junction of the descending colon and sigmoid flexure an indistinct mass could be felt, firm, dull on percussion, and somewhat painful on pressure. It was difficult to ascertain the actual relation of this swelling to the bowel, its extent, and its attachments; to determine these rectal insufflation was carried out with the following result. With a pressure of half a pound to the square inch, the sigmoid flexure became distended gradually in a few minutes, and without causing the least pain or inconvenience; at the site of the swelling a well-marked depression now appeared, and at the bottom of this the dull mass remained fixed to the posterior abdominal wall; continuing the pressure a whistling noise was heard at this spot, and the colon became distended and distinctly mapped out, leaving a sulcus at the point which we now knew to be strictured, and bound down to the posterior wall of the abdomen. Two inches of the colon was so fixed, and from his age and appearance I considered it a case of cancerous stricture infiltrating the tissues behind the colon. As the obstruction was not threatening life, we decided to postpone operative treatment (which could only take the shape of a colotomy), until such procedure became absolutely necessary.

Case III.—*Tumour of Descending Colon.*—P. M., aged fifty-three years, consulted me about a pain he had had for some years in the left

lumbar and inguinal regions. He had suffered much from constipation, and purgatives caused so much pain that he avoided their use as long as possible. The result was that swelling and uneasiness in the abdomen frequently occurred, and often feverish attacks were superadded, rendering him very miserable. On examining the abdomen I found the colon distended, the ascending and transverse portions being resonant, the region of the descending colon and sigmoid flexure being dull on percussion. Two inches internal to the anterior superior spine was a rounded and somewhat nodular tumour, movable from side to side, but apparently not so from above downwards. To decide the exact situation of this tumour, which I believed to be the cause of the obstruction, I inflated the bowel with hydrogen at a pressure of half a pound to the square inch, and found that, after the sigmoid flexure bulged forwards above Poupart's ligament, the tumour ascended to a level with the highest part of the iliac crest, became still more marked and less painful on pressure. After a time, the gas could be heard rushing through beneath the tumour, which now became somewhat resonant.

Diagnosis.—Sacculated cancerous tumour of colon.

Operation.—In order to place the patient in the most favourable position for a resection of the descending colon and its splenic flexure, I performed a right lumbar colotomy, which has reduced the size of the abdomen very considerably, removed the febrile condition, and allowed the patient to gain strength.

Case IV.—*Pyloric Obstruction due to Adhesive Peritonitis fixing Pylorus to Abdominal Wall.*—A. C., aged thirty-nine years, came under my care with supposed cancer of pylorus. For two years he had suffered from severe pain over an area of $2\frac{1}{2}$ inches, reaching from the ninth costal cartilage towards the umbilicus. Here there was dulness on percussion, while to the left of this point and extending down to the umbilicus there was an extensive area of resonance corresponding to a dilated stomach. For many months vomiting occurred in from one to three hours after every meal, and nothing would in any way relieve this symptom. He had not a cachectic appearance, although he was greatly emaciated. Believing that he had stricture, which was spasmodic and depending on some ulceration near the pylorus, I dilated his stomach, using a pressure of $\frac{1}{2}$ lb. to the square inch, with the following result:—When the stomach became outlined on the abdominal wall, every inspiration of the patient caused a creaking under the hand laid over the pyloric region, and from this until complete distension occurred the patient complained of somewhat severe pain in the dull area. The dulness became more marked until under a pressure of 1 lb. to the square inch, the stomach became very tense, and something seemed to give way, and the patient experienced a sharp pain in the part. The gas now escaped into the duo-

denum, with, at first, a gurgling, then a rushing sound, which was distinctly audible. Hyperdistension was soon removed, and the stomach could still be distinctly defined by its prominence; but the dulness had almost entirely left the area above-mentioned, nor could we detect any abnormal dulness elsewhere over the abdomen. The conclusion I came to was that adhesive peritonitis had fixed the pylorus to the anterior wall of the abdomen. Under pressure the adhesion yielded, and the stomach soon resumed its function, so that in three weeks he gained 16 lbs. in weight, and left for England, feeling well. I have since heard from him, and learn that he has gained 38 lbs, and is in vigorous health.

Case V.—*Pyloric Cancer.*—J. C., aged fifty-seven years, consulted me on April 9th, 1889, in reference to epigastric pain and tenderness. He had all the evidence of pyloric obstruction, and one inch above and to the right of the umbilicus a nodular mass could be felt. It was the size of a hen-egg, and apparently free. When I first examined the patient I believed the case one for exploratory laparotomy, but before recommending the procedure I examined the stomach by means of the insufflator, to find that the tumour was fixed to a mass which could be traced up to the liver and down to the transverse colon. This left no doubt on my mind that the mesenteric and portal vessels were obstructed by infiltration of the cancerous material, and that, consequently, operation was out of the question, as, no matter how permeable the intestinal canal might be made, absorption could not take place with sufficient rapidity to ensure repair of the wound or to nourish the patient should he survive. The patient has since died. Rapid emaciation occurred.

Case VI.—*Omental Cancer.*—Rev. Mr. T., aged fifty years. Dilatation of stomach at pressure of $\frac{1}{2}$ lb. to square inch. Before insufflation, a rounded nodule could be felt half way between umbilicus and ensiform coat, and to right of umbilicus $1\frac{1}{2}$ inches a patch of dulness could be detected and a hardness felt, which extended downwards and inwards to below the umbilicus. After insufflation stomach became distinctly defined, lower border reaching down to umbilicus; pyloric end passed to right side to line with the costal cartilage. The dull area was pushed downwards and to the right. The nodule on the anterior wall of the stomach was turned upwards under the ensiform cartilage. We thus became aware that—1st, the marked and movable tumour was not pyloric; 2nd, the thickening at pylorus extended along the greater curvature in the omentum, and was pushed down by the distended stomach. We now pressed gently on the distended viscus, and the air rushed through the pylorus, showing that close stricture was out of the question.

I wish to remark here that when infiltration of the pylorus occurs to such an extent as to offer resistance to the passage of semi-solid food, gas usually escapes readily through the opening, as the annular muscular valve becomes incapable of totally occluding the opening; 2nd, when ulceration exists near the pyloric orifice spasm frequently prevents the passage of gas as well as food, although there may be not the least trace of organic narrowing; and, 3rd, the healthy pylorus resists the passage of gas until tired out by continuous pressure.

Bearing these points in mind, one will not rush to the conclusion that the pylorus is narrowed whenever gas or air does not freely pass through. What, then, may be asked, does inflation of the stomach show? It determines—1st, the amount of distension, if any; 2nd, the position of the pylorus; 3rd, whether or not it is infiltrated; and 4th, the fixity or mobility of any tumour of the stomach.

(*To be concluded in the next Number.*)

ART. IV.—*Researches in the Chemistry of Selenic Acid and other Selenium Compounds.* By SIR CHARLES A. CAMERON, M.D., F.R.C.S.I., V.P.I.C.; Professor of Chemistry and Hygiene, R.C.S.I.; and JOHN MACALLAN, F.I.C.; Demonstrator of Chemistry, R.C.S.I.

ALTHOUGH selenic acid was prepared by Mitscherlich so far back as the year 1827, few chemists appear to have studied its properties. This want of interest in selenic acid is rather surprising, seeing that it possesses so close a relationship to sulphuric acid, which is so important a compound. Finding the chemistry of selenic acid so meagre we resolved to make an investigation of this body, with the view of bringing, so far as we could, its chemistry abreast with that of sulphuric acid, and also in the hope that its study would yield results which might throw additional light on the relations of the latter acid. The following pages contain the results at which we have arrived.

PREPARATION OF ANHYDROUS SELENIC ACID, H_2SeO_4.

Selenic acid has hitherto been known only in a dilute form. When heated to upwards of 260° C. it commences to decompose into selenium dioxide, oxygen, and water, which prevents any further concentration. Berzelius describes it as containing, when of

greatest strength, 4 per cent. of water; but it has been obtained since his time, in a more concentrated condition, by Fabian, who, by evaporating the acid to a temperature of 265° C., found it to have a strength of 94·9 per cent., and by placing this acid, while still hot, under the receiver of an air-pump, increased its strength to 97·4 per cent. Sulphuric acid, as is well known, has not been obtained in a perfectly anhydrous state by ebullition—although in its case decomposition does not occur; for when it reaches a strength of about 98·66 per cent. it boils without further change. When, however, an acid of this strength is surrounded with a freezing mixture, the anhydrous acid, H_2SO_4, crystallises out. An attempt was first made to obtain anhydrous selenic acid by similar means. Great care was taken to obtain an acid of pure quality. An examination was specially made for nitric, sulphuric, hydrochloric, and hydrobromic acids. Selenious acid, when present, was removed by diluting with about 30 parts of water, saturating with hydrogen sulphide in the cold, filtering and concentrating on the water-bath. The acid thus treated was then examined for sulphuric acid and found to contain none. A portion of the acid, when ignited, left a residue equivalent to 0·07 per cent. of the anhydrous acid present in the specimen used in the experiment; this was ascertained to consist of neutral sodium selenate, and was, of course, derived from an acid salt, of which it was necessary to take account in the succeeding experiments.

Some of this acid was gradually heated until the temperature rose to 250° C. It was next poured into an open dish, and allowed to cool slowly over sulphuric acid, under an exhausted receiver. The strength was then taken with seminormal soda solution, which was specially prepared for those experiments, by making a solution in water of pure caustic hydrate prepared from sodium, and bringing it carefully to the required strength: 11·81 cubic centimetres of soda solution were required for neutralisation by 0·4371 gram of acid, equivalent to 97·75 per cent. of selenic acid, being thus a little stronger than that obtained by Fabian in a similar way.

The acid thus concentrated was then poured into a stout wide glass tube, having one end closed, and the open end fitted with an indiarubber cork, through which passed a glass rod for the purpose of keeping the viscous liquid stirred, and a capillary tube for admission of air, in order to expose the acid to the full atmospheric pressure. The necessity for those precautions in the case of sulphuric acid has already been fully pointed out by Marignac

(*Annales de Chimie et Physique* (3), 39, 184), the discordant results arrived at by various observers being probably due to the different conditions under which they worked. The latter precaution is particularly necessary, as we have observed that sulphuric acid occupies less volume in the solid than in the liquid state.

The temperature of the acid was then gradually lowered. Its viscosity increased as it became colder, until at a temperature of $-51{\cdot}5°$ C. it was as thick as soft pitch; the tube might be inverted without the acid flowing, and a glass rod could be moved in it only with great difficulty. Still it did not freeze, until after vigorous stirring, maintained for a couple of minutes, a crystal appeared, and then the entire mass almost instantaneously crystallised, the temperature rapidly rising. When removed to a warm room, the crystals were rather permanent, and when nearly melted, recrystallisation could easily be induced by exposure to moderate cold as long as any crystal remained, showing that previous to freezing the acid had been in a more or less superfused condition. It was found to be impossible, however, to separate the crystals by draining the liquid portion, as the latter was so viscous that it carried the crystals with it. Under the microscope they were seen to be long prisms.

An attempt was next made to examine the conditions under which selenic acid becomes strengthened in a vacuum, with the object of obtaining, if possible, a more concentrated acid; and the following arrangement was made for the purpose:—The glass-receiver of an air-pump was fitted tightly at its neck with an indiarubber cork, through which passed a bent tube, connected horizontally with another and wider tube containing solid potash. This was connected with a wide U tube, filled with pieces of potash about half an inch long, and kept cool by immersion in a beaker of water. Connection was then made with a small stout flask containing the selenic acid, and varying in size from 100 to 250 cubic centimetres, as required. The potash-tube next the receiver was intended for the purpose of preventing acid fumes from injuring the air-pump, and for the same reason a vessel of potash was placed within the receiver. The air-pump employed gave a very good vacuum; when all the connections were made, and the pump exhausted, there was often scarcely any appreciable difference in the levels of the columns of mercury in the gauge. For temperatures up to 100° C. the flask containing the acid was heated in a beaker of water; for higher temperatures oil was used. Soon after

commencing the experiments it was found necessary to make an arrangement for the purpose of stirring up the viscous acid and exposing fresh surfaces to the vacuum, and the following plan was devised:—A test-tube, which fitted easily the neck of the flask, was shortened by removing evenly a portion of the open end. It was then inverted and pushed down into the flask, so that when the open end was below the surface of the acid, the closed end extended sufficiently far into the neck of the flask to prevent the tube from being thrown down by the ebullition of the liquid. The vapour given off from the acid within the tube became gradually expanded as the temperature rose, and passed in a stream of bubbles through the acid, keeping it well agitated. The tube also served the purpose of preventing splashing from the boiling acid up into the neck of the small flask

Some selenic acid, which had been previously partially concentrated, was kept in an open dish on the water-bath for four hours, and its strength then determined: 0·6364 gram required for neutralisation 14·72 c.c. of seminormal soda solution, equivalent to 83·68 per cent. of selenic acid—a strength intermediate between a monohydrate and a dihydrate. The acid thus obtained at 100° under the ordinary pressure of the atmosphere, was stronger than that obtained by Graham from dilute sulphuric acid by heating it to the same temperature in a vacuum until it ceased to lose weight—the dihydrate H_2SO_4, 2 H_2O remaining, showing the greater affinity for water possessed by the latter acid.

Selenic acid, concentrated as above described, was poured into the flask previously referred to, and gradually heated. Weak selenic acid commenced to pass over at 55° C., evidenced by the potash liquefying and effervescing, owing to the presence of potassium carbonate which it contained, being the ordinary commercial potash. It was then heated slowly up to 100° C., kept at that temperature so long as any acid distilled over, and the strength of the residue taken: 0·9432 gram required for neutralisation 24·10 c.c. of seminormal soda solution, equivalent to 92·44 per cent. of selenic acid. Subsequent to this experiment, acids heated on various occasions to 100° were found to have the following percentages of anhydrous selenic acid:—92·03, 92·08, 93·28, and 93·70; the different results being found due to the varying conditions of the experiments, such as the length of time of heating, the quantity of potash and its proximity to the acid, the amount of the latter and the size of the flask containing it.

The acid, which had been heated to 100°, was next heated to 150° C. At the latter temperature the more or less dilute acid distilling over appeared in the form of dense white fumes resembling those of sulphuric acid. 0·6898 gram of the residue left neutralised 18·42 c.c. of seminormal soda solution, equivalent to 96·58 per cent. of selenic acid. It was again heated to 150° C., and kept at that temperature so long as any acid distilled over: 0·417 gram of the residue left neutralised 11·21 c.c. of seminormal soda, equivalent to 97·25 per cent. of selenic acid.

A fresh portion of acid was heated to 155° C. and kept for some time at that temperature: 0·8045 gram of the residue neutralised 21·72 c.c. of seminormal soda, showing 97·67 per cent. of selenic acid. It was next heated to 162° C., and the strength of the residue taken: 0·7291 gram neutralised 19·72 c.c. of seminormal soda, equivalent to 97·85 per cent. of selenic acid.

The same acid was then heated to 216° C., and the residue obtained was allowed to remain in the flask during the night. In the morning it was found to be frozen into a crystalline mass so hard that it was necessary to use a steel chisel in order to remove portions for examination. When dissolved in water and tested it was found to contain some selenium dioxide. Trials were then made to ascertain if a lower temperature would produce a similar result without decomposition of the acid; 180° C. was found to be sufficient for the purpose, and the following course was finally adopted:— The acid which had been concentrated on the water-bath, as far as possible, was heated gradually in the flask to 100° C., and kept at that temperature so long as any acid distilled over, the greater part of the water being thus removed. The U tube was then disconnected, emptied, and refilled with stick potash. The flask was next heated gradually to 180° C., kept at that temperature until no more acid distilled over, and then immediately cooled. A still better arrangement was to use so little acid that it was unnecessary to change the potash. The acid was heated gradually and continuously up to 180° C., allowing bubbles to pass slowly through it, as before described. When 180° C. was reached the potash was watched, and as soon as it ceased to be acted upon, the flask was immediately cooled. An hour or less was generally found sufficient time for a small quantity of acid.

A specimen obtained in this way was found, when examined, to be very free from selenium dioxide, a little of it diluted with water and saturated with hydrogen sulphide, merely giving a faint

yellow coloration without any precipitate. Another portion was acidified with hydrochloric acid and barium chloride added; on boiling the filtrate with stannous chloride it only became darkened in colour without any precipitation of selenium. 0·6725 gram was taken to estimate the strength. 18·54 c.c. of seminormal soda were required for neutralisation, equivalent to 99·73 per cent. of selenic acid; 0·724 gram of another acid prepared in a similar way, but which contained rather more selenium dioxide than the last, required for neutralisation 19·94 c.c. of seminormal soda, equivalent to 99·64 per cent. of selenic acid. A portion of a third acid weighing 0·329 gram, was dissolved in water, barium chloride added, and also hydrochloric acid in order to prevent any selenious acid from precipitating. The resulting barium selenate weighed 0·6337 gram, equivalent to 99·75 per cent. of selenic acid. As has been already mentioned, the acid employed contained an acid potassium selenate equivalent to 0·07 per cent. of neutral sodium selenate found. Taking this into account, and calculating on the acid with the sodium selenate deducted, the three results become respectively—

I.	II.	III.
99·80	99·71	99·77

The difference between the above results and 100 per cent. must be ascribed partly to the very hygroscopic character of the acid in the anhydrous condition, and consequent slight absorption of moisture during the process of weighing. It is necessary to observe, however, that in making the above calculations, and all through in this paper, 78·87 has been adopted as the atomic weight of selenium, the number given by Meyer and Seubert in their "Recalculations of the Atomic Weights." If 78·80, the number given in Clarke's "Recalculations," be taken, the three results become—

I.	II.	III.
99·75	99·66	99·72

Petersson and Ekman state that the results of a great many analyses show that the most probable atomic weight of selenium is 79·08 (*Berichte der deutschen chemischen Gesellschaft*, 9, 1210). If this number be taken, the above percentages become respectively—

I.	II.	III.
99·94	99·85	99·91

The results arrived at from the foregoing experiments lead to

the conclusion that *at* 180° C. *in a vacuum, selenic acid parts with all combined water, and remains as the anhydrous acid,* H_2SeO_4.

It may be well here to summarise the precautions necessary to be taken in preparing the anhydrous acid, so far as we have ascertained them. They are briefly as follows:—To use for the purpose an acid as pure as possible, to have a thoroughly good vacuum, to avoid too high or prolonged heating, and to keep a sufficient quantity of solid potash in close proximity to the acid all through—which may be arranged by using a small flask, and having the tube leading from it short and wide.

Properties of Anhydrous Selenic Acid.

Anhydrous selenic acid is a white crystalline solid melting at 58° C. to a colourless oily-looking liquid. When thoroughly melted it remains in a superfused state, and usually requires to be cooled to about 5° C. with constant stirring before it again freezes. The temperature then rises rapidly to 58° C., and remains then stationary until complete solidification of the acid has taken place. When at rest it can be cooled lower than 5° C. without freezing, and it will remain in a stoppered bottle for months, and during frosty weather, in a liquid condition. It instantly solidifies at any temperature below 58° C. if a crystal of the solid acid be dropped into it, and it freezes sometimes at ordinary temperatures when rubbed with a sharp piece of glass or with the point of a pipette. It thus exhibits the property of superfusion in a remarkable degree, and to a greater extent than anhydrous sulphuric acid, which, according to Marignac, possesses eminently the property of superfusion (*Annales de Chimie et Physique* (3), 39, 184). Its melting point, 58° C., is higher than that of anhydrous sulphuric acid, 10·5° C., but lower than that of telluric acid, which may be heated nearly to redness without melting.

Anhydrous selenic acid crystallises in long interlacing hexagonal prisms. In an impure condition from the presence of selenium dioxide and other substances, its melting point is lowered, and under those circumstances it is sometimes deposited slowly and spontaneously in the form of double pyramids, many of them intersecting in pairs.

Although much has been written upon the freezing-point of sulphuric acid, but little information appears to be published regarding its crystalline form. It is stated, however, in "Graham's Chemistry," Vol. I., that the most concentrated acid, when frozen,

often yields regular six-sided prisms of a tabular form. Chaptal describes the crystals as being six-sided prisms terminating in pyramids with six faces. Both accounts agree in placing them in the hexagonal system. In order to see if the appearance of the crystals agreed with either of the above descriptions, some sulphuric acid was strengthened by boiling for some time, and then cooled down until it froze. The crystals obtained were found to be long six-sided prisms ending in pyramids, as described by Chaptal, and no prisms of a tabular form were observed. It is thus interesting to find that both anhydrous sulphuric and selenic acid crystallise in prisms in the hexagonal system, but it remains doubtful whether or not they are strictly isomorphous.

Selenic acid in the anhydrous condition possesses a powerful affinity for water, absorbing it quickly from the atmosphere. Their combination is attended with contraction and considerable evolution of heat, but less so than in the case of water and sulphuric acid. Like the latter, it disintegrates and blackens many organic substances, such as cork, indiarubber, &c. From others it withdraws the elements of water; thus, alcohol heated with it yields ethylene, and glycerine, acrolein. On cellulose it has an action similar to that of strong sulphuric acid, paper being converted by it into a tough parchment-like substance. For this reason it should not be filtered through filtering paper, except when cold and very dilute. Iodine dissolves in the superfused acid when heated, forming a brown-coloured solution. It is acted on violently by pentachloride of phosphorus in the cold—a reaction which we are at present examining. Oxychloride of phosphorus also acts strongly upon it when warmed slightly, the reaction being attended with copious evolution of gas and reduction apparently to lower compounds. Selenium dioxide dissolves in it when heated, but the greater part crystallises out again in the cold. There is no evidence of formation in this way of an acid analogous to hyposulphuric acid, $H_2S_2O_6$. The crystals of the solid acid dissolve in strong sulphuric acid, and also in Nordhausen acid.

The specific gravity of the superfused acid, taken with a sprengel tube at 15° C., was found to be 2·6083. The specific gravity of the solid acid was taken in pure benzene of specific gravity, 0·8851, which is not acted upon by it in the cold, and in which it it insoluble. As might be expected, it at once blackens commercial benzene. Its specific gravity, taken in this way, proved to be

2·9508 at 15° C. It thus resembles anhydrous sulphuric acid in being denser in the solid than in the liquid state. The specific gravity of the liquid acid is much greater than that of anhydrous sulphuric acid, 1·8384; and on the other hand, the specific gravity of the solid acid is less than that of anhydrous telluric acid, which is stated by F. W. Clark to be 3·425 at 18·8° C. (*Silliman's American Journal* (3), 14,281; 16,401).

Monohydrated Selenic Acid: its Preparation and Properties.

Some selenic acid, which had been concentrated on the water-bath, was heated for some time in a vacuum at 100° C., and its strength determined: 0·7858 gram neutralised 20·00 c.c. of semi-normal soda solution, equivalent to 92·08 per cent. of selenic acid. The acid so prepared was diluted with sufficient water to reduce its strength to 88·96 per cent., corresponding to a monohydrated acid, H_2SeO_4, H_2O. It was then poured into a wide tube and its temperature gradually lowered, the same precautions being taken as to stirring and admission of air as were adopted previously in freezing out the anhydrous acid. Its viscosity increased with the fall in temperature, until at —32° C. it froze into a mass of crystals. These were melted and recrystallised several times, and the resulting product examined.

A few of the crystals obtained were long needles, but most of them were large and broad, having a general aspect to which the term "glacial" might be applied appropriately, but differing in appearance under the microscope from those of glacial sulphuric acid.

Its melting-point was found to be 25° C. Like glacial sulphuric acid, and also like anhydrous sulphuric and anhydrous selenic acid, when once melted it exhibits the property of superfusion, and to as great an extent as the last-mentioned acid, since it may be cooled to more than 50° C. below its melting-point, with constant stirring, before it again freezes. When frozen, it remains quite solid at ordinary temperatures; but if the bottle containing it be removed to a warm room, or much handled, it commences to melt. Like the anhydrous acid, it at once freezes at any temperature below its melting point when a crystal of the same acid is dropped into it. It resembles the anhydrous acid also in having a melting point much higher than sulphuric acid of the same strength, that of glacial sulphuric acid being given by Pierre and Puchot as 7·5° C., by Jacquelin as 8° C., and by Marignac as 8·5° C. It resembles

the latter acid in having a melting point lower than its anhydrous acid, but while the difference is about 2·5° C. in the case of sulphuric acid, the melting points of the two selenic acids differ by 33° C. In the following table their melting points are compared:—

	Anhydrous	Monohydrated
Sulphuric acid . .	10·5°	8°
Selenic acid . .	58°	25°

It may be well to state here that 0° C. is given erroneously in several chemical works as the melting point of anhydrous sulphuric acid. Marignac, the most recent investigator who has studied the subject, assigns the temperature, 10·5° C., as its true melting point.

The superfused monohydrated selenic acid has a specific gravity of 2·3557 at 15° C. That of the solid acid was taken in pure benzene, in which it is insoluble, and on which it is without action at ordinary temperatures, even after standing all night. A portion of the liquid acid was poured into the specific gravity bottle, a crystal dropped into it, and the acid, having become firm and cold, weighed, and the bottle filled with benzene. The specific gravity was found to be 2·6273 at 15° C. It thus resembles the anhydrous acid in being denser in the solid than in the liquid state; while melting, the crystals sink rapidly in the liquid portion.

This acid commences to boil at 205° C., the acid vapour given off being at first very weak, but it increases in strength with the rise in temperature. A more dilute acid gives off water only until the temperature reaches 205°. Dilute sulphuric acid is stated to behave in a similar manner, giving off nothing but water until the boiling point reaches 205° C.–210° C., at which temperature it has the strength of the monohydrated acid, H_2SO_4, H_2O.

The ease with which an acid of this strength can be obtained and crystallised, supplies a means of separating impurities from selenic acid, all that is necessary to do being to boil a dilute acid until the temperature reaches 205° C., cool, and drop in a crystal from an acid already frozen; the resulting crystals can then be melted and recrystallised.

It may be well here to draw attention to the conflicting statements which are made in various works regarding the crystalline form of glacial sulphuric acid. Watts' "Dictionary," Vol. V., and Richter's "Inorganic Chemistry," state that it crystallises in six-sided prisms; but in several chemical works the crystals are described as rhombic prisms, while Pelouze and Fremy mention that it forms large transparent crystals which are rhomboidal prisms.

The crystalline form is thus referred to three different systems. The first description is probably copied by mistake from that of the anhydrous acid. The most recent investigators of the point are Jacquelain (*Annales de Chimie et Physique* (3), 30, 343), and Pierre and Puchot (*Annales de Chimie et Physique* (5), 2, 164). The latter say that the crystalline form appeared to them to be the oblique rhomboidal prism, and that they obtained the crystals, some very large, others thin and very long. Jacquelain describes them as being oblique prisms very inclined and very large; and states that he obtained them, by a rather slow crystallisation, distinctly oblique and very short, and by a quick crystallisation, in very long oblique prisms.

The Existence of Higher Hydrates.

A portion of dilute selenic acid was concentrated on the water-bath and its strength taken: 0·8603 gram neutralised 19·48 c.c. of seminormal soda solution, equivalent to 81·92 per cent. of selenic acid. The acid so prepared was diluted with sufficient water to reduce its strength to 80·11 per cent., corresponding to a dihydrated acid, H_2SeO_4, 2 H_2O, and its temperature then gradually lowered. When kept at —51° C. for some time it became as viscous as thick syrup, but did not freeze. The last acid was then diluted to a strength of 57·32 per cent. of selenic acid, corresponding to a hydrate of the composition H_2SeO_4, 6 H_2O. The acid thus prepared did not freeze when kept at —49° C., and was quite liquid at that temperature.

Although no proof of the existence of higher hydrates than the monohydrated acid was obtained in the foregoing experiments, it appears probable that a dihydrated acid, and perhaps other hydrates, are capable of existing. Sulphuric and telluric acid have both been obtained as dihydrates. Considerable heat is evolved when monohydrated selenic acid is mixed with sufficient water to reduce its strength to that of a dihydrated acid. When the latter is further diluted, there is an additional slight evolution of heat. It is probable that as the freezing point of monohydrated selenic acid is considerably below that of the anhydrous acid, so the freezing point of a dihydrated acid is still lower. In order to get an approximate idea of the amount of water which anhydrous selenic acid absorbs, a portion weighing 0·9776 gram was placed on a watch-glass protected from dust, but with free access of air. After twenty-four hours the acid weighed 2·0284 grams, showing an

absorption in that time of between eight and nine molecules of water by one molecule of anhydrous acid. Another portion weighing 0·4416 gram was exposed until it ceased to absorb water; the acid then weighed 1·8152 grams, indicating absorption of rather more than 25 molecules of water by one molecule of anhydrous acid. Having arrived at this stage, it commenced to give off a little of the water which it had previously taken up, but the weather became warmer just at this period, so that probably the above amount does not represent the total absorption of which the acid is capable. It is less, however, than the amount taken up by the molecule of sulphuric acid, which is variously stated at from 80 to 100 molecules of water.

The Conditions which affect the Freezing Points of Selenic Acid and Sulphuric Acid.

It has long been recognised that in order to determine the melting point of a chemical compound with accuracy it is necessary, by crystallisation or other means, to obtain it in a pure condition. The necessity for such a precaution is well shown in the case of the oxides and acids of sulphur and selenium. An example taken from the former class of bodies is furnished by sulphuric anhydride. Up to a comparatively recent date great diversity of opinion prevailed regarding the melting point of this substance until Weber showed that, as hitherto examined, it had usually contained a minute quantity of water, which had the effect of altering its melting point, crystalline form, and other properties. Sulphuric acid supplies another instance of a similar effect. Its melting point in the anhydrous condition is 10·5° C., while that of the monohydrated acid is 8° C; yet commercial sulphuric acid has usually been found to remain liquid above a temperature of —30° C. or —40° C., and it is stated in some chemical works that by addition of a little water to the commercial acid its freezing point has been lowered to —80° C.; but it is not mentioned whether this occurred in closed or in open vessels. A still more striking example of the influence of want of purity upon the melting point is afforded by selenic acid. In the anhydrous state it melts at 58° C., but a slightly dilute acid, as we have found, was frozen only when a temperature of —51·5° C. was reached, showing a fall of 109·5° C.; and probably further dilution would be attended by a still greater reduction of the freezing point. The depression of the freezing point can be due only partly to superfusion since the superfused anhydrous acid freezes at about 5° C.

The monohydrate present in the dilute acid therefore exerts an influence in lowering the freezing point of the anhydrous acid, and also its melting point. An analogous action probably occurs in the case of some metallic salts, which, although without apparent chemical action upon each other, have a lower fusing point when mixed than when heated separately. A consideration of the foregoing facts leads to the conclusion that *dilute selenic acid having a strength greater than* 88·96 *per cent. contains the anhydrous and also the monohydrated acid existing in a superfused state, and exerting a solvent action upon each other.* In the case of sulphuric acid a similar action evidently occurs. The effects of agitation and of alteration of pressure upon the freezing points of the above acids have already been referred to.

The Method Used in Freezing Selenic Acid.

Liquefied sulphur dioxide was poured into a thick glass tumbler, holding about half a litre, fitting into a somewhat wider and deeper cylindrical gas jar, which served to retain any of the dioxide splashed from the interior vessel, the whole being imbedded deeply in a considerable quantity of cotton wadding contained in a wooden box. A rapid current of air was driven through the sulphur dioxide, the air being first dried by means of sulphuric acid and then cooled by passing through a leaden worm surrounded by a mixture of salt and pounded ice, or less effectively, sodium sulphate and hydrochloric acid. Any desired degree of cold within limits could easily be maintained by regulating the current. When the outside air was at 0° about half a kilogram of sulphur dioxide was found sufficient for more than two hours use, evaporation taking place but slowly at the low temperature reached, the latter, measured with an alcohol thermometer, falling below —50° C. In warmer weather nearly as low a temperature was obtainable, but consumption of the sulphur dioxide was much more rapid. No arrangement of freezing mixtures produced nearly so low degrees of cold as were attained in the above manner. Doubtless when a supply of dry snow is available, and the weather is very cold, so that the apparatus and materials used can be well cooled down previous to mixing, a very low temperature is obtainable by ordinary freezing mixtures, but those conditions are not often to be met with in these climates. On the other hand, sulphur dioxide is cheap and easily procurable, and convenient when used in the manner described.

[*To be continued.*]

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Guide for Irish Medical Practitioners. By Professor R. J. Kinkead, M.D., Dubl.; J.P.; Lecturer in Medical Jurisprudence, Queen's College, Galway; Medical Officer, H.M. Prison, Galway; Ex-President of the Irish Medical Association, &c. With a Preface by A. H. Jacob, M.D., &c. Published by and with the authority of the Irish Medical Association. Dublin: John Falconer. 1889. 8vo. Pp. 591.

It is to be regretted that the late date at which this work reached us makes it impossible for us to do little more, on the present occasion, than notice its publication. We are glad to say that we can commend it to our readers as a mine of information for all medical practitioners in Ireland, but more particularly for those who are employed in the public services of this country.

The Preface is from the facile pen of one whose life-work has been the advocacy of the claims and rights of the hard-worked and generally underpaid members of the public medical services—Dr. Archibald H. Jacob. It is a spirited and masterly statement, and cannot fail to impress the reader with the magnitude and national importance of the work done by the medical profession in Ireland. There is little open to criticism in this "Foretalk," but we think that the last paragraph might very well have introduced—not closed—the preface, while there is something approaching an anti-climax in the opening words of the sentence on page xii.—namely, "Indeed, the experience of the Irish Medical Association, and *of myself*, is that, for want of such guidance, a large number of the Medical Officers throughout Ireland are strangely ignorant of the law and regulation under which they work."

The "Guide" itself is divided into three parts. The first, consisting of five chapters and extending over 66 pages, includes excellent dissertations on professional responsibilities and consultations. These may be accepted, in the words of the Preface, as representing the opinion of the Irish Medical Association with

reference to the etiquette of practice recognised by the profession. At page 44 we meet the curious word "hypocriphal"; surely this must be a mistake or printer's error for "apocryphal."

The second part of the work, embracing twenty-one chapters and running through 332 pages, deals with the law, rule, and custom of each branch of the medical service of Ireland—the Poor-law Medical Service; the Registration of Births, Deaths, and Marriages; the Public Health Service; the Prison Medical Service; the Lunacy, County Infirmary, and Factory Certification Services. To these are added chapters on the Medical Inspection of Merchant and Passenger Ships and of Seamen, and on the purely departmental office of Admiralty Surgeon and Agent—an appointment which rests with the Director-General of the Navy. In this part of the "Guide" the author not only gives the terms of the several Acts of Parliament and of the official regulations which refer to the matters under discussion, but states the usage, collating with much trouble the decisions of the authorities upon moot questions, and such judgments of the Courts of Law as are forthcoming. The actual law is elucidated by a commentary in a parallel column, and we have had the advantage of eliciting from a learned Judge the opinion that this part of Dr. Kinkead's work has been very well done indeed.

Part III. is really an ably-written treatise on Medical Jurisprudence. It is devoted to an epitome of the law by which the practice of the profession at large is governed, without special reference to the Irish Medical Services. It contains eighteen chapters and runs to rather more than 150 pages. Its subject-matter includes such important topics as malpraxis, process of law, medical witnesses, evidence, the Coroner's court, dead bodies, poisoning, the Pharmacy Act, anæsthetics, abortion, infanticide, assaults, rape, heat and cold, food and dietaries, starvation, and life assurance.

It will be seen from the foregoing brief analytical review that Dr. Kinkead has endeavoured, and not in vain, to place in the hands of his professional brethren a comprehensive and reliable treatise on many of the more important phases of State Medicine. His work is worthy of his high reputation, and fitly crowns the Jubilee of the Irish Medical Association—a body which deserves well of every medical practitioner in this country for a consistent advocacy of the rights of the profession during half a century of untiring and philanthropic work.

The Anatomie of The Bodie of Man, by Thomas Vicary, Sergeant of the Surgeons to Henry VIII., Queen Mary, Edward VI., and Queen Elizabeth; Master of the Barber-Surgeons' Company; and Chief Surgeon to St. Bartholomew's Hospital, London, 1548–62. The Edition of 1548, as re-issued by the Surgeons of St. Bartholomew's in 1577. With a Life of Vicary, Notes on Surgeons in England, Bartholomew's Hospital, and London in Tudor times, an Appendix of Documents, and Illustrations. Edited by Fredk. J. Furnivall, M.A., Hon. Dr. Phil.; and Percy Furnivall, a Student of St. Bartholomew's. Part I. London: N. Trübner & Co. 1888. Pp. 336.

The Early English Text Society, under its indefatigable Director, Dr. Furnivall, has done good work for antiquaries during the past quarter of a century; but now for the first time appeals to the sympathies of the medical profession by the re-publication of Vicary's quaint treatise on Anatomy. Thomas Vicary, born in the last decade of the 15th century, was appointed one of the six new Governors of the re-organised St. Bartholomew's Hospital in 1548, and soon after he became Resident Surgical Governor. This position he held until his death in 1561 or 1562. In 1548 he published, or, as Dr. Furnivall hath it in his "foretalk" (which the vulgar call "preface"), "publisht," his *Anatomie.* It was reprinted by the surgeons of "Barts," "with a few Forewords," in 1577; "and from the unique copy of that issue, the earliest now known, our reprint is made." The title-page of the 1577 reprint is as follows:—"A profitable Treatise of the Anatomie of mans body: Compyled by that excellent Chirurgion, M. Thomas Vicary, Esquire, Seriaunt Chirurgion to King Henry the eyght, to King Edward the vj., to Queene Mary, and to our most gracious Soueraigne Lady Queene Elizabeth, and also cheefe Chirurgion of S. Bartholomewes Hospital. Which work is newly reuyued, corrected, and published by the Chirurgions of the same Hospital now beeing. An. 1577. ¶ Imprinted at London by Henry Bamforde." Vicary's "breefe Treatise"—he spells his name "Vycarie" himself—"compyled for the use of al Vnlearned Practicioners in Chirurgerie," occupies, with marginal notes added by the editors, 75 octavo pages, five of which are taken up with some excellent advice to "Chirurgions," which was, we cannot doubt, as efficacious as our modern introductory addresses to students. In some respects Vicary's standard is too high for these degenerate

days. "In this poynt," he says, "al Authors doo agree that a Chirurgion should be chosen by his complexion [disposition, habit of body], and that his complexion be very temperate, and al his members wel proportioned. For *Rasis* sayth, Whose face is not seemely, it is vnpossible for him to haue good manners." This dogma is marginally translated into modern English—"One with an ugly face can't have good manners."

Any page we open will yield a sample of old-world ignorance, expressed in quaintest language. We shall transcribe, as a specimen, the beginning of the "anathomie" of the head:—

"Because the head of man is the habitation or dwelling place of the reasonable soule of man, therefore, with the grace of God, I shal fyrst speake of the Anatomie of the head. Galen saith in the seconde Chapter *De unamentis*, and Auicen rehearseth the same in hys fyrst preposition and third Chapter, prouing that the Head of man was made neither for Wittes, nor yet for the Braynes, but onely for the eyes. For beastes that haue no heades, haue the orgayne or instrumentes of Wittes in their brests. Therefore God and nature haue reared vp the head of man onely for the eyes, for it is the hyest member of man: and as a beholder or watchman standeth in a highe Towre to geve warning of the Enemies, so doth the Eye of man geve warning unto the common Wittes, for the defence of all other members of the body. Nowe to our purpose. If the question be asked, how many things be there conteyning on the head, and howe many thinges conteyned within the head? As it is rehearsed by Guydo, there bee but fyue conteining, and as many conteined: as thus, The Heyre, the Skinne, the Flesh, the Pannicles, and the Bone, neither rehearsing Veyne nor Artere. The which Anathomie can not be truly without them both, as thou shalt wel perceiue both in this Chapter, but specially in the next. And nowe in this lesson I shall speake but of Heire, Skinne, Fleshe, Veines, Pannicles, and Bones, what profite they doo to man, euery of them in his kinde.

"Of the Heire of the head (whose creation is knowen in the Anatomie of the simple members) I doo note foure vtilities why it was ordeyned: the first is, that it defendeth the Brayne from too muche heate, and too muche cold, and many other outwarde noyances: The seconde is, it maketh the forme or shape of the head to seeme more seemelyer or beautyfuller. For if the head were not heyred, the face and the heade should seeme but one thing: and therefore the heyre formeth and shapeth the head from the face: The thirde is, that by the cullour of the heyre is witnessed and knowen the complexion of the Brayne: The fourth is, that the fumosities of the brayne might assend and passe lyghtlyer out by them. For if there were a sad thing, as the skinne or

other, of the same nature as the heyre is, the fumosities of the brayne might not haue passed throwe it so lightly, as it doth by the heyre." (P. 24).

And so the worthy Thomas Vicary maunders on, spelling vilely, illustrating the late Lord Malmesbury's dictum that English orthography is a "capricious science." [a] We have copied our text accurately, but whether this is a faithful, literal, transcript of its original we cannot say. Having found, certainly in one passage and probably in another, "peritoneum" printed for "perineum," we are suspicious of the orthographical fidelity of the text before us. However this may be, we thank the editors and the Society for an interesting picture of sixteenth century anatomical learning. The Appendix contains sixteen papers, all of which relate to the condition of our profession under the Tudors—"Ten receipes by Henry VIII. and his Physicians," "Ordinances of the Barber-Surgeons of York, A.D. 1592," and "The Corporation of London's Order for the Government of St. Bartholomew's Hospital, A.D. 1552," are especially noteworthy. This volume will be a valuable addition to a medical library.

An Examination of the Theory of Evolution, and some of its Implications. By GEORGE GRESWELL, Graduate in Honours, and late Open Exhibitioner of Christ Church, Oxford; recently Lecturer in Physical Science, under the Government of the Cape of Good Hope, at the Diocesan College, near Cape Town. London: Williams & Norgate. 1888. Pp. 155.

THIS production, dedicated to the Right Hon. A. J. Balfour, and drescribed in the preface as "an earnest endeavour to render the interesting, important, and intricate doctrine of evolution, as understood by modern writers, a little more simple, and, on that account, more acceptable to the public mind," cannot be recommended as light recreative reading to the practitioner wearied with a day of toil. It is deadly dull. The sixth chapter, "taken mainly from a pamphlet" by the author's brother, and devoted to "Pathology treated from the aspect of Evolution," and the two following chapters, are those with which we are most concerned,

[a] This "barbarian"—to adopt Matthew Arnold's classificatory nomenclature—remonstrated against the rejection, on the ground of incapacity to spell English, of certain candidates for admission to the diplomatic service, because, he said, spelling was a "capricious science."

and deserve some attention. New pathological formations are regarded as reversionary in character, pointing "to a remote ancestral condition, when the primary importance of cells as units, not greatly modified, distinct, and uncombined into aggregates, or but imperfectly and incompletely combined, was far greater in respect of individual power than it can be where each cell is dependent on the activities of other units with which it is combined, as in the higher forms of life."

Studies in Clinical Medicine. By BYROM BRAMWELL, M.D., F.R.C.P. Ed., F.R.S.E.; Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine in the Extra-Academical School of Medicine, Edinburgh. Vol. I., Nos. 1–6. Edinburgh and London: Young J. Pentland. 1889. Quarto. Pp. 106.

WHEN the first number of Dr. Byrom Bramwell's "Studies in Clinical Medicine" reached us we felt some misgivings as to the wisdom of the step taken by so able a physician as the author of the "Studies" has long since proved himself to be. It is true that he had a distinguished precedent, and in the introduction to his first number he acknowledges that he had "been deeply impressed with the vivid clinical pictures and very great educational advantages which this method of publication affords, by reading the fascinating reports of Professor Charcot's out-patient clinic (polyclinic) which have appeared during the past year."

A growing acquaintance with Dr. Bramwell's "Studies in Clinical Medicine" has led us so to modify our opinion of the value of the publication that we are now prepared to recommend it to all students of medicine, whether they are still in a condition of pupilage or are fully-fledged practitioners. In Dr. Bramwell's own words, the work consists of "a record of some of the more interesting cases observed, and of some of the remarks made, at the author's out-patient clinic in the Edinburgh Royal Infirmary."

The author's intention is to publish a number every alternate Friday throughout the summer and winter sessions, always provided that he is not laid aside by illness. Up to the present six fortnightly parts have appeared, and each new number has been better than its predecessors. Already a series of very interesting cases has been placed on record, and, in a word, the undertaking is full of promise as a contribution to the literature of Clinical

Medicine. We would do Dr. Bramwell and his publisher an injustice were we to omit mention of the high-class illustrations which are so lavishly introduced into the text and also inserted as plates. We have seldom, if ever, seen as beautiful copies of photographs as those in the fourth number which represent the characteristics of facial palsy. The lithographic delineations of herpes zoster in the fifth number are also worthy of all praise.

While we are thus favourably impressed with the value and usefulness of Dr. Bramwell's work, we think that much space is wasted in the records of the different cases by printing at length every routine question put to each patient by the examining physician, and every answer given to the questions. The only justification for this is that it would probably make the student familiar with the method of questioning the patient with a view to diagnosis. Of course some essential questions should be put into type in the record of each case, but the usual routine queries might with advantage be omitted.

With this friendly "growl" we heartily wish Dr. Bramwell every success in his new venture, and trust that his health may long be spared to publish every alternate week one of his interesting studies in Clinical Medicine.

Chimie Inorganique et Organique, Botanique, Zoologie. Notes Servant à la Préparation de l'Examen du Premier Doctorat. Recueillies et Publiées par Lewis-Nicholas Worthington. Paris: Imprimerie de la Faculté de Medecine. 1889. Pp. 438.

It is, at first sight, hard to believe that this portly volume is merely a collection of notes, as it is larger than many English text-books; but the large type and the loosely-sewn sheets make it look more important than it really is.

Botany and zoology are treated as entirely different subjects, the distinctions between plants and animals being dogmatically laid down. The botanical part deals with structure and classification, and is careful and accurate. The physiological part of the subject is not dealt with specially, but is touched upon here and there in the structural botany. The zoological part is much less satisfactory. The classification is very primitive. For example, the amphibians are merged with the reptiles as "ovipares: a poumon;" and there is an order of pachyderms subdivided into four classes, containing respectively the elephant, the hippopotamus,

the pig, and the horse. The statements also are often misleading. On the one page, under the heading, "L'Ordre des Batraciens," we read the two following statements:—"Les branchies rentrent et se convertissent en poumons." "Le cœur est à 2 cavités, . . . il n'y a pas de cœur artériel."

The Morton Lecture on Cancer and Cancerous Diseases, delivered at the Royal College of Surgeons of England. on Thursday, November 29th, 1888. By SIR SPENCER WELLS, Bart., F.R.C.S. Pp. 47. London: Churchill. 1889.

IN the first part of this lecture statistics are given which seem to show conclusively that cancer is becoming more and more frequent year by year. It is satisfactory to know that the rate of increase is not so rapid in Ireland as in England and Scotland, or in the United States. As to the pathology of the affection Sir Spencer Wells seems most inclined to the theory of a bacterial origin, although he recognises the deficiency of evidence. He holds that the so-called epithelial cancer cells can develop from connective tissue cells, and gives a drawing in illustration of this, but which we need hardly point out, does not afford a particle of evidence in support of this heretical theory.

As to the question whether a cancerous growth alone, or the whole of the part or organ which it has invaded, should be removed, the author holds that in the case of the breast the entire gland should be excised, unless the growths are small, and close to the margin of the gland, more particularly when they lie on the axillary side. Here the breast should not be removed, as the disease arises probably not in the mamma but in the peculiarly modified sweat glands described by Dr. Creighton. In cases where the period for operation has been allowed to slip by, or where recurrence of disease has taken place, we should still not abandon the hope of so modifying the cancerous part as to lead to a cure of the disease—an event always possible while the disease remains local.

The concluding part of the lecture deals with the subject of total removal of the uterus for cancer. Sir Spencer Wells has twice removed the pregnant uterus by laparotomy. In one the disease recurred in the pelvis, and the patient died thirteen months after the operation. In the other both mother and child recovered. Extirpation through the vagina is more successful. Olshausen

has performed this operation for cancer 152 times with 26 deaths. This able and interesting lecture concludes with a description of the stages of the operation and the precautions necessary to adopt in order that a good result may be looked for.

Report on the Trinidad Leper Asylum for the Year 1888. By Beaven Rake, M.D., Lond. 1889.

The most interesting part of the Report is an account of some experiments made to cultivate the *Bacillus leprœ*, towards which purpose a grant of money was made to Dr. Rake by the British Medical Association. The results were negative, and in all the animals examined he failed to find any local growth or general dissemination of the bacillus after inoculation, whether beneath the skin, in the abdominal cavity, or in the anterior chamber. Feeding with leprous tissue also gave negative results. Neither could Dr. Rake find evidence of growth of the bacillus when placed in putrid fluids or buried in the earth. Therapeutically he has found creolin useful as a deodoriser in cases of gangrene, and as a stimulant to indolent leprous ulcers.

The Essentials of Physical Diagnosis of the Chest and Abdomen. By J. Wallace Anderson, M.D., Physician to the Royal Infirmary, Glasgow, &c. Glasgow: James Maclehose & Sons.

Dr. Anderson's manual will be found an extremely useful little work on the subject, and one to which junior students may be referred by their teachers in clinical medicine.

It is simple and concise, but compiled with great thoroughness, and in a systematic manner.

A section is devoted to the general principles of physical diagnosis; another is taken up with the physical examination of the lungs; a third deals in like manner with the heart; while the examination of the abdomen occupies the final chapter. There is added to these an appendix, which contains an outline to aid junior students in the independent reporting of medical cases.

The book is essentially practical, and at the same time it contains the views of different authors where differences of opinion occur in connection with the production of certain phenomena of the thoracic viscera.

Interspersed with the larger type are paragraphs in smaller type

dealing chiefly with what is matter of opinion, and, therefore, recommended by the author to be read by the student at a later period of his course.

The chapters on the lungs and heart are excellent.

Essentials of Pathology and Morbid Anatomy. By C. E. ARMAND SEMPLE, B.A., M.B., Cantab.; L.S.A.; M.R.C.P., Lond.; Physician to the Bloomsbury Dispensary; Physician to the North-Eastern Hospital for Children, Hackney, &c., &c. With forty-six illustrations. London: Henry Renshaw. 1889. 8vo, Pp. 160.

A STUDENTS' Manual of Pathology—not too long, but yet clear and intelligible—is at present much needed. We fear Dr. Semple's "Essentials" is not exactly the book that is required. We have in this work a good many facts and some fancies about Pathology, but the facts described are described so badly, the facts omitted are so numerous, and the whole style and arrangement of the book is such as to render it of very little value indeed.

We have noticed many very curious things in the pages of this work. For example, in the account both of acute tubular nephritis and of chronic tubular nephritis, Dr. Semple does not consider the glomeruli worthy of any reference whatever. On page 69 we read: "Sarcomata extend to remote regions of the body by the lymph and blood paths and through their wandering cells, the slender condition of the smaller vessels which supply the growth being essentially favourable to *the access of blood into the cells.*" Curious idea—blood getting *into* cells. We find it stated that Virchow ascribed lymphatic leucocythæmia to enlargement of the *lymphatics.* We are told that the presence of a large quantity of phosphates in the urine "may be considered as caused by a breaking up of the mind and body."

The figure which is intended to represent an adenoma of the breast shows large alveoli filled with irregularly-shaped cells of various sizes—in fact, an ordinary carcinoma.

But for these and other similar trifles we must pardon Dr. Armand Semple, for he has provided us with several very amusing though somewhat difficult puzzles, and, if we may draw the conclusion from the columns of the daily newspapers, conundrums are popular in which the object is to make sense out of a number of letters or words mixed up confusedly together. We may put one

of Dr. Semple's puzzles thus:—Discover any resemblance in the following description to the intestinal lesions of typhoid fever:—

"As the base of the ulcer approaches the peritoneum, the inflammation of that membrane increases; when the ulcers are numerous, the patches become confluent, and the outer surface may be covered with plastic lymph. If this covering becomes the seat of ulceration, perforation must ensue, but it is often temporarily delayed by the adhesions of sloughy tissue within the membrane itself, or by the formation of solid lymph upon its external surface."—P. 21, Art. Typhoid Fever.

We trust that no one will be rash enough to imagine that he will learn anything about the essentials of Pathology from this work.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Fæces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice, and the Air, and the Clothing (after Salisbury). By Ephraim Cutter, M.D., Harvard, and University of Pennsylvania; A.M., Yale; LL.D., Iowa; Hon. F.S.Sc., London. New York: 1888. Pp. 81.

"Morphologies" being taken to mean microscopic forms, organic or inorganic, the nature of this pamphlet is sufficiently indicated by that portion of the title-page which we have given. From the remainder we infer that the author is an expert microscopist; and from the autobiographical preface we learn that Dr. Cutter resigned "a fine country practice," and settled in Cambridge, Mass., in order to devote himself to microscopy and microphotography, following out Dr. Salisbury's plans and views. His work, we are told, is the result of his father's injunction upon him "to study these three things—(1) what is the cause of consumption, (2) what is the cause of the diseases of women, (3) what is the cause of diseases of the nervous system." This task would seem to be as difficult of execution as any of those imposed upon Psyche by her angry mother-in-law, but it has (Dr. Cutter says) been accomplished. "Advisedly, seriously, and thoughtfully, can it now be said, these three problems have been answered satisfactorily, and we know that unhealthy alimentation causes, primarily, all of these classes of disease."

There is nothing in the work before us to support this claim; but there are valuable lists of the foreign substances detected by

the microscope in blood, sputum, &c., &c., &c.; and there are suggestions for the extended application of the microscope to diagnosis which are eminently worthy of attention. In phthisis, for instance, Dr. Cutter, claims that the morphological method exceeds in value auscultation and percussion, "because it detects consumption of the lungs before there is any lesion of them." In syphilis, again, microscopical examination of the blood will detect the disease, "without a word to the patient;" will tell when the cure is complete; will prevent the tertiary lesions; will indicate the progress of the case under treatment. Whether it is true that "consumption comes by feeding on food that undergoes alcoholic and vinegary fermentation in the digestive organs," or that cancer is "a disease of nutrition-tissue, developed under mob-law, and goes in families, because families feed on the same food at the same table," is immaterial to the main issue—the applicability of minute microscopical research to diagnosis to a greater extent than has hitherto been attempted. Let it be tried, and Dr. Cutter's "partial syllabic lists" will be found most valuable in the trial.

Board-School Laryngitis. By GREVILLE MACDONALD, M.D., London, Physician to the Throat Hospital, Golden-square, W. London: Alexander P. Watt. 1889. Pp. 31.

OUR author, at least, should have a good word for the School Board, as it has afforded him an opportunity of writing a booklet of 31 pages, in which he brings still another charge to swell the long list of grievances already laid at the doors of that body.

While not doubting for a moment that the conditions under which many of the teachers in the Board Schools are obliged to discharge their duties, must, especially in females often probably of deficient physical developement, produce serious injury to the vocal organs; still we cannot say that the writer altogether proves the necessity of adding to the already over full nomenclature of disease a "School-Board Laryngitis."

All the symptoms and diseased conditions he describes, are to be observed in patients who are not Board School teachers, and it is only reasonable to expect that the manifestations of laryngitis are to be most intensely developed under such conditions as Dr. Macdonald shows to exist in many Board Schools.

The value of Dr. Macdonald's observations would have been

much more obvious had he given any figures showing the relative frequency of the complaint among the teachers, &c.

The line of treatment recommended in some respects, certainly does not err on the side of want of thoroughness extending even to the use of laryngeal cutting forceps.

We are quite with the author in a suggestion which he makes at the end of his remarks—viz., that "In the training colleges voice-production should be scientifically and practically taught as an imperative item in the course of study."

The work is illustrated by three carefully executed cuts.

Medical and Surgical Report of the Tyrone County Infimary for the Year 1888. Omagh: Printed at the *Tyrone Constitution* Office. 1889. Pp. 12.

Mr. Edward Thompson, F.R.C.S.I., the able and efficient Surgeon to the Tyrone County Infirmary, reports that during the year ending December 31, 1888, 501 patients were admitted to the hospital, 1,973 patients from all parts of the county were given advice gratuitously, 34 trusses were issued, and 136 patients were refused admission. The year was remarkable for the very large number of serious operations, and the small percentage of deaths—the mortality representing only a fraction above 1 per cent—a most gratifying and satisfactory result. The following are a few of the principal operations:—1 abdominal section, 1 ovariotomy, 1 amputation of the arm, 4 amputations of the breast, 1 amputation of the leg, 1 amputation of the forearm, 1 amputation of the foot, 5 partial amputations of the hand, 14 removals of cancer lip, 1 excision of the knee joint, 2 excisions of the elbow joint, 1 enucleation of eyeball, 1 amputation of the tongue, 1 excision of the wrist joint, 1 removal of large adherent fibrous polypus of the uterus, 12 operations for removal of diseased bone, 1 strangulated inguinal hernia, 1 ligature of cleft palate, 25 removals of tumours, and 1 hare-lip, &c. All these serious operations were successful, with two exceptions. In one case of an almost hopeless nature the patient died, and in the second instance the disease returned after excision of the elbow joint, necessitating amputation of the arm. Three hundred and thirty-six minor operations were performed, and 33 fractures and dislocations were under treatment during the year. The average number of patients daily in the hospital was 42, and their stay in the wards was on the

average, 27 days. The total expenditure was £1,438 8s. 3d.—the average cost of each occupied bed being £33 19s. 6d., and of each patient, £2 17s.

We have to congratulate Mr. Thompson upon the very satisfactory results shown in Tables 1 to 4, appended to the Report, and upon the strong arguments in favour of county infirmaries which may be drawn from those Tables.

M'Gill University Annual Calendar—Faculty of Medicine 56th Session, 1888–89. Montreal: 1888.

In the autumn of last year the 56th Session of the Canadian University opened. It includes Faculties of Arts, with special provisions for the education of women, "with course of study, exemptions, and honours similar to those of men;" of Applied Science, providing "a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science;" of Medicine, granting M.D. and C.M.; and of Law, conferring B.C.L. and D.C.L.

The course of medical study compares favourably with the insufficient training which satisfies the vast majority of the qualifying bodies in the United States, but it is still behind the requirements of modern times. It "extends over four sessions, of six months each, and one summer session of three months in the third academic year."

Besides the ordinary subjects of medical education, there are courses of Histology, Clinical Microscopy, Gynæcology (distinct from Midwifery), Ophthalmology and Otology, Hygiene, and Pathology. Attendance at hospital, vouched by "ticket," for eighteen months, is required, and a six-months' compounding certificate. The fee for the degree M.D. and C.M. is 30 dollars; and the total collegiate and hospital expenses are estimated at 400 dollars. Board may be obtained at 15 to 20 dollars a month.

Now, it is one thing to exact certificates of attendance at lectures and hospitals, and quite another thing to ensure that such certificates shall *tell the truth.* We sought for evidence of effort to attain this latter object in the regulations of the M'Gill University without much success. A roll is to be called "from time to time,"

but the "times" are left undefined, and, without such definition, the rule that "absence from any number of lectures can only be excused by necessity or duty, of which proof must be given," is worthless. We are quite aware that laxity in this particular is not confined to transatlantic schools. In the most frequented medical school in the British Islands, we are credibly informed, a student may obtain a certificate of attendance upon a course of 100 lectures by appearing at *thirteen* and paying his fee. It is, we fully admit, arguable that attendance upon lectures is unnecessary — that students would better be left to themselves as to the way of acquiring the knowledge necessary to enable them to meet their examiners. But this view (which is certainly not our own) does not yet prevail; until it does, attendance upon a course of lectures, the subject of which is held to be an essential part of medical science, should be compulsory, and a certificate of such attendance should be a truthful document, and not, as in too many instances at present, a sham.

Fifty-four students graduated in medicine and surgery in 1888–9.

The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta. By Hobart Amory Hare, B.Sc., M.D. Philadelphia: P. Blakiston, Son, & Co. 1889. Pp. 150.

This valuable essay on a difficult and obscure subject was awarded the Fothergillian Medal of the Medical Society of London. It contains, recorded in tabular form, the details of 520 cases, and thus furnishes the largest storehouse of facts connected with diseases of the mediastinum.

The following are the conclusions arrived at by the author:—

1. Cancer is more frequently found in the mediastinal spaces than any other morbid process.—134 cases.

2. Abscess is the morbid process next in frequency of occurrence.—115 cases.

3. Sarcoma occupies a third position as to frequency.—98 cases.

4. Lymphomata and Lymphadenomata occupy a fourth place, but are much rarer than the others mentioned.—21 cases.

5. The anterior mediastinum is affected far more frequently than are the other two spaces.

6. Most mediastinal growths occur in adults.

7. More males are affected than females by mediastinal disease, be that disease what it may.

8. Cancer and sarcoma of this space are necessarily fatal.

9. Abscess is recovered from in about 40 per cent. of the cases.

The Causation of Disease: an Exposition of the ultimate Factors which induce it. By HARRY CAMPBELL, M.D. London: H. K. Lewis. 1889. Pp. 368.

THE opening sentences of the preface of this book will explain much of its character:—

"The object of this work is to trace out the ultimate causes of disease—not of particular diseases, but of disease in general. In writing a work of this kind two courses are open to the author. One is to saturate himself with all the available literature on the subject, and, having done so, to collect into an intelligible whole the facts and opinions thus gleaned, adding, amending, and omitting as may seem fit. The other is for him to think the subject out independently from beginning to end, and to draw upon the resources of literature only just so far as apposite matter may chance to present itself in the ordinary course of his reading, or as his line of thought may from time to time suggest some special reference. I have adopted the latter course."

We would suggest that neither of these courses is the right one. If a person wants to leave a mark on the pathological science of his time he should neither merely compile what others have discovered and written nor develop his system out of his moral consciousness, as Dr. Campbell has done, but go to Nature, and investigate and experiment and found his theories not on what he thinks out, but what he sees and compels Nature to show him. As examples of books written on this method we would mention Virchow's "Cellular Pathology" and Cohnheim's "General Pathology," and contrast the influence exerted on science by these works with that produced by such works as that before us, and others of the Spencerian school.

Dr. Campbell's book is, as we have said, entirely speculative. We are far from denying the ability and ingenuity of some of his arguments, but we question very much whether it will tend in any degree to advance our knowledge of disease or our practical acquaintance with the causes which produce it. It would be impossible for us, in the space allotted to us for this notice, to follow the author all through his long and elaborate reasoning,

nor do we think we could by an abstract do justice to his argument. To those who are fond of the writings of Mr. Herbert Spencer and his followers the work is to be commended, but we cannot advise its perusal to those who prefer a more objective kind of science.

Dr. Campbell seems to carry his desire for originality to the degree of evolving even his poetical quotations out of his inner consciousness, if we may judge from "the lines of Tennyson" given on p. 52.

The Therapeutics of Kronenquelle Water. By Prosser James, M.D., M.R.C.P. London: Trübner and Co. 1889. Pp. 32.

In a series of short articles Dr. Prosser James gives such particulars of the Kronenquelle spring and its surroundings as will materially assist medical men in determining not only what patients to send to Salzbruun, but also for what patients the bottled waters will be useful. The articles deal with "Physical and Chemical Qualities," "Physiological Action," "Therapeutic Uses," and "Mode of Using the Water."

The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury. By C. R. Illingworth, M.D. 1888.

Dr. Illingworth is evidently an ardent therapeutist, and his experience leads him to the highly satisfactory conclusion that most, if not all, acute specific febrile disorders can be successfully treated upon two broad principles. The indications, in short, are germicidal and hæmatinic. The former indication is met by the biniodide of mercury; the latter, by iron. For details of the method we may refer our readers to Dr. Illingworth's booklet.

Papers on Dermatology. By E. D. Mapother, M.D. London: J. & A. Churchill. 1889.

Dr. Mapother has here collected, in a revised and amplified form, some of his earlier papers, and portions of his Lectures on Skin Diseases. The subjects are diverse, and include several topics of interest—*e.g.*, the vascularity of the skin and the communications of subcutaneous with visceral veins—an anomalous form of eczema on the ear, resembling Paget's disease of the nipple, &c., &c.

PART III.

SPECIAL REPORTS.

REPORT ON THE RECENT LITERATURE OF VACCINATION.

By Alex. Nixon Montgomery, Member of the King and Queen's College of Physicians, Ireland, &c.; Examiner in, and Teacher of, Vaccination, appointed by the English Local Government Board; Secretary and Senior Medical Officer of the Vaccine Department, Local Government Board, Ireland.

As a Royal Commission on Vaccination is at present sitting in London, we recommend those who take an interest in this subject to read the following works, as they put forth the views of opponents, as well as those of friends, of vaccination:—

"The Natural History of Cow-pox and Vaccinal Syphilis." By Charles Creighton, M.D. Crown 8vo. Pp. 160. Cassell & Co. 1887.

"Vaccination Vindicated; being an Answer to the Leading Anti-Vaccinators." By John C. M'Vail, M.D., D.P.H.Camb.; Physician to the Kilmarnock Infirmary; Medical Officer of Health, Kilmarnock, &c. Pp. 160. Cassell & Co. 1887.

"Jenner and Vaccination: a Strange Chapter of Medical History." By Charles Creighton, M.D. Pp. 354. Swan, Sonnenschien, & Co. 1889.

We consider Dr. Creighton's first book, written, as he says, for the profession, to be the better of the two, as in it he puts his ideas into a concise form. He starts with Jenner's early troubles with cow-pox inoculation; he then treats of the true pedigree of English vaccine, the grease of the horse as a source of vaccine lymph, and comes to the important question—What is cow-pox? He then writes about the effects of vaccine inoculation in its first remove from the cow, humanised cow-pox and its anomalies, vaccinal sores and vaccinal syphilis, and the increased death-rate from infantile syphilis. Under these headings he has managed to compress into

a small space a quantity of useful information on the subjects he treats of. There is much force in his statement that many so-called cases of vaccinal syphilitic sores and ulcers, sometimes followed by roseola, or other rashes, are cases in which the vaccinal ulcer is neither more nor less than a reversion to the original type and full cycle of cow-pox as it occurs, or used to occur, on the cow's teats, or the milker's hands or face, and on the child's arm after vaccination with "primary lymph," or with lymph of the first removes. Those who talk now-a-days of taking lymph direct from a cow with *cow-pox* would do well to bear these facts in mind. To avoid these disastrous consequences much care has to be taken in the choice of a vaccinifer, the state of the vesicles, and the date at which the lymph is taken. The author sums up by saying—"The first duty of everyone is, once for all to disabuse his mind of Jenner's invention of the name *variolæ vaccinæ* for cow-pox, owing to the want of likeness, still more in circumstances than in form, between the pustules of small-pox and even the modified kind of inoculated cow-pox vesicle. Having dismissed the Latin name, we come to the thing itself, to its characters on the milch-cow's teats, and the circumstances of its very occasional origin thereon; to its characters as communicated by contact to the milker's hands and face; to its characters, experimentally cultivated and modified by artificial selection, on the arms of infants, and to the occasional reversions of type, with disastrous consequences, in the ordinary course of vaccination practice. . . ." And adds—"It is because I am persuaded that the profession must lead rather than follow public opinion in bringing the theory of cow-pox up to date, that I have thrown this contribution to the subject into a strictly professional and even technical form."

We think that it would have been well if Dr. Creighton had been satisfied with thus having done his duty, as his second book on the subject—the preface of which begins with these words, "the object of this book is to make clear to general readers the steps in the rise and acceptance of Jenner's doctrine and practice of vaccine inoculation"—is of quite a different type. He starts by casting a slur on the scientific work for which Jenner was made a Fellow of the Royal Society "nine years before he came before the world to recommend cow-pox as an effective substitute for small-pox in the way of inoculation." He then goes on to do what, in the first chapter of his previous book, written for the profession, he states in these words—"I may say at once that the intention

is not to deal with the whole Jennerian novelty, including the validity of the proof, the manner of endorsement by the heads of the profession, and the substantial recognition by a Parliamentary Committee. In that comprehensive spirit the story of the rise of vaccination has been treated lately by a hostile writer (Mr. White) with much literary ability, and with a degree of scientific knowledge commendable in a layman." If it was not necessary to deal with these subjects in his first book, written for medical men, why should he now take such trouble to go into them in detail for the general public, except his object is to bring the practice of vaccination into discredit by trying to establish that Jenner's work was done in an unscientific manner and for sordid ends? The author also suggests, at the end of his book, that for monetary motives the President and appointed Censors from the Colleges of Physicians and Surgeons in England, who had five seats on the Vaccine Board, gave their assent, at a critical period, to Jenner's views about vaccination; and by this means the assent of the whole English profession was secured.

The early history of vaccination, as carried out in Germany, France, and Italy, is given; and it may be mentioned that medical men in these countries were not satisfied to accept cowpoxing until they had made experiments themselves, and tested some of their cases by subsequent variolation. The author has spared no pains in searching through the early literature of the subject in different countries to try and prove that this testing was done in a perfunctory manner with attenuated small-pox virus, and therefore was of no value as a proof that cow-pox warded off or modified an attack of small-pox. That all these trials were not so made is evident. One formal trial at the Allgemeine Krankenhaus, in Vienna, is related, "where fourteen children who had been vaccinated on the 1st September, 1801, were variolated on the 12th November with matter taken from the pustules of a child in the *natural small-pox*. They remained a fortnight in the hospital, and were daily inspected by the Director himself;" but in not one of them did the slightest trace of *small-pox infection* declare itself. "This means that there was, at all events, no general eruption, although there may have been, and almost certainly was, the local pustule." This is a specimen of the manner in which the author tries to explain away what to an unbiassed mind would seem a clear case of protection from small-pox by cow-pox. At page 351 he gives some short statistics of the small-pox epidemic at Bavaria.

"The cases of small-pox in 1871 were 30,742, of which the vaccinated were 29,429, or 95·7 per cent., and the unvaccinated 1,313, or 4·3 per cent. There were 3,994 deaths among the vaccinated cases—a rate of 13·8 per cent.; among the unvaccinated there were 790 deaths—a rate of 60·1 per cent.; but 743 of the latter were infants under one year, leaving 47 deaths of the unvaccinated of all other ages. The excessive mortality of infants is, of course, not peculiar to small-pox." Surely it is fair to assume that had these 743 infants been properly vaccinated during the early years of their life their names would not have been recorded on the death-roll.

The objects of Dr. M'Vail's able book are thus stated by himself in the Preface:—"Begun merely as a reply to Dr. Alfred Russel Wallace's monograph on 'Small-pox Statistics and Vaccination,' it has developed into a commentary, more or less complete, on much of the anti-vaccination literature of the day. The author has read every scrap of such writings that has come under his notice, and in doing so has been much struck by the very narrow compass within which the whole argument against vaccination is carried on. . . . The author's aim has been to construct a work which might form a handy reference-book for medical men, who knowing thoroughly the value and safety of vaccination are yet unprepared to refute every assertion that may be made in its disparagement. . . . And to those of the general public who care to look into the methods and proceedings of the more active members of the Anti-Vaccination Society, the work is offered to show the nature of the instruments from which the noise against vaccination proceeds. For these purposes the index has been made copious."

In his book the author treats his subjects under the following heads:—"The Decrease in Small-pox Mortality," "Small-pox as it is," "The Mitigation of Small-pox by Vaccination," "Results of Re-vaccination," "The Alleged Evils of Vaccination," "The Present-day Doctrine," "Some Notes on Small-pox in the Eighteenth Century."

This work should be carefully studied, as the author takes up the various points constantly mentioned by anti-vaccinators, and following them carefully refutes them. The various statistics are also dealt with, and the leading facts brought prominently before the eye by means of elaborate charts.

In conclusion the author states that previous generations, indeed,

needed no book-learning on the subject. Early in the century there was the all-too-vivid recollection of the terrible epidemics that had swept the country in the pre-Jennerian times. Later on, the relics of these outbreaks were manifest in the scarred and blinded victims forming so large a proportion of the individuals whom a man would meet in an hour's walk along a public thoroughfare; but so great has been the power of vaccination that these evidences are fast dying out, and the very efficiency of the marvellous discovery of Jenner is the only real element of danger to the maintenance of its application. For now-a-days the people have to be educated in this matter, not only by their eyesight, but by the teachings of history; but surely not, if our best endeavours can prevent it, by leaving helpless children to die by thousands from small-pox, as assuredly they will die if a large unvaccinated community of them be permitted to grow up in our midst. It is with this object, the author states, that he has written the present work, using Dr. Wallace as the best representative of those who have agitated against vaccination, and whose repute in other departments of knowledge has led some few, even among thinking people, to suppose that there must be some ground for his contentions.

The Bristol Medico-Chirurgical Journal (March, 1889), reviewing some books on Vaccination, says:—

"Vaccination has got into undeserved discredit by the way in which its details have been carried out by thoughtless or careless operators. It is much to be desired that all vaccinations should be taken out of the hands of private practitioners, and allowed to be performed only by public vaccinators. The difficulties in the way of this much-needed reform could be easily overcome. Vaccination, as an important branch of Preventive Medicine, should be under Government inspection. Not only is there great difficulty, privately, in obtaining trustworthy lymph, often necessitating a resort to unauthorised sources, but, in deference to the sentimental objections of ill-informed parents, there are many practitioners of good social standing who are not ashamed, by vaccinating by one or two small insertions, to earn a cheap popularity, although thereby a serious danger is added to the life of a child thus made unfit to successfully resist a possible attack of small-pox. There are also doctors of a lower grade who set themselves up in unwholesome opposition to the Public Vaccinator, and, by performing the operation for a degrading fee of sixpence or a shilling,

with a vaccination also much reduced in quantity—and therefore in quality—draw off a considerable number of ignorant mothers from the Vaccination Station, the efficiency of which becomes impaired through a greatly diminished attendance seriously limiting the selection of lymph, and the proper management of which becomes well-nigh impossible.

"In the light of Marston's figures (Seaton's 'Handbook of Vaccination,' ed. 1868, p. 216; M'Vail, p. 36; Woodward, p. 15), confirmed by all after-experience, conduct such as this, in various walks of professional life, seems little short of criminal, and has now reached such appalling magnitude as to urgently call for Government interference.

"If vaccination is to be a reality, and not merely something which leads its subjects into a fool's paradise, the State must ensure, by an inspection through properly-qualified officials, that it is carried out in all ranks of society in a thoroughly efficient manner."

The following is the table referred to above, taken from M'Vail, p. 36:—

Cases of Small-pox classified according to the Vaccination Marks.	Number of Deaths per cent. in each class respectively.
Unvaccinated	$35\frac{1}{2}$
(1) Stated to have been vaccinated, but having *no* cicatrix ...	$21\frac{3}{4}$
(2) Having *one* vaccine cicatrix	$7\frac{1}{2}$
(3) Having *two* vaccine cicatrices	$4\frac{1}{8}$
(4) Having *three* vaccine cicatrices	$1\frac{3}{4}$
(5) Having *four or more* vaccine cicatrices	$\frac{3}{4}$

We would draw attention to the fact that in the small-pox epidemic which prevailed in Dublin in 1878 the mortality amongst the unprotected was 56 per cent.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.K.Q.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—Prof. Birmingham, M.B.
Sectional Secretary—H. J. Broomfield, F.R.C.S.I.

Friday, March 15, 1889.

The President in the Chair.

Models of Joints.

Dr. Cunningham exhibited models of joints, comprising casts from frozen sections of the elbow-joint and wrist-joint prepared by himself, showing, as regards the elbow-joint, that there was no jarring or striking of one bone against the other, a little pad of synovial fat intervening.

Deformed Fœtus.

The President exhibited a full-time fœtus with a curious deformity. The hand, instead of being articulated to the end of the forearm, was articulated to the margin of it. The forearm was extremely short. On both sides the thumb was missing, and the index finger was fused with the middle. In his opinion the radius was absent on both sides, and with the radius the thumb—the corresponding section of the hand, and the hand was articulated to the inner margin of the ulna. Some five years ago he had met a similar case of a child, aged eight or ten, in the Mater Misericordiæ Hospital.

Dr. Cunningham said his experience of the deformity was confined to two or three recorded cases. Anyone who examined the upper extremity would come to the conclusion that Dr. Birmingham's decision was the correct one—namely, that the radius was absent.

Horse-shoe Kidney.

Dr. W. H. Thompson exhibited four specimens of horse-shoe kidney obtained in the Anatomical Department of Trinity College, of which he gave the following details:—

No. 1, obtained from an aged female subject in January of this year.

The lateral parts of the organ were situated obliquely, being directed downwards and inwards, and occupying the lumbar and part of the iliac regions of each side. Their lower ends were united across the middle line by a narrow isthmus, which crossed the aorta immediately above its bifurcation. The isthmus was constituted chiefly of capsule, but dissection showed a thin layer of reddish substance, probably renal in structure. There was one ureter for each side, which sprang from a pelvis situated in the concave upper and inner side of each lateral part, and passed down in front of the organ. The arterial supply was very abundant. The right half of the organ received three arteries, two from the aorta (going to the upper and lower ends respectively of the lateral mass on its inner side) and one from the common iliac, which curved backwards to enter the outer side near its lower end.

The left part received three arteries, two from the aorta—one very small—and one from the common iliac similarly disposed to those on the right side.

No. 2 (also obtained this Session) was found in a male subject, of middle age and powerful physique. The lateral parts of the organ showed an approach to a lobulated condition. They were strongly curved, and united at their lower ends by a broad isthmus.

There was one pelvis and one ureter for each half. The ureter passed down in front.

The right half had three arteries, two from the aorta and one from the common iliac. The left had four arteries, three from the aorta and one from the common iliac. The whole organ was situated lower in the abdomen than normal kidneys are, but not so low as was No. 1.

No. 3, of which no history is obtainable except that it was obtained by Prof. Cunningham in Trinity College. The organ, as a whole, is crescentic rather than horse-shoe. The isthmus is very stout. There are one pelvis and one ureter to each side. The ureter, as in the others, passed down in front. The right half received two arteries, one from the aorta and one from the right common iliac. The left half had only one artery, which sprang from the aorta.

No. 4 belongs to the anatomical department, and was handed down to Prof. Cunningham by his predecessor. Its arterial supply has not been preserved. The only point of interest about it is the approach to a lobulated condition which it presents.

In looking up the literature of this subject Dr. Thompson was not able

to find any statement as to the relative frequency with which this form of anomalous kidney occurs, though he cannot doubt that such exists. The three specimens first described were the only ones found in the anatomical department of Trinity College since the present distinguished Professor was appointed to its chair—that is now nearly six Sessions. He thinks he is justified in saying that they were the only ones that could have occurred, since it is most unlikely that such an abnormality could escape detection. Every abdomen is opened and invariably the kidney is exposed. In fact, if a student does nothing else, he seems never to omit examining these organs.

In those six years about 450 subjects have been dissected—75 to 80 being the number usually dissected in the year. That would give an average of about 1 in 150, and there is no doubt it is pretty nearly correct. It is difficult to account for the occurrence of this abnormality—one cannot regard it as being simply a reversion to a more primitive type—since, so far as the author knows, none of the lower animals are provided with a kidney at all like it. It is at first sight equally difficult to conceive how any possible arrest of development could account for it, since so far as is known the kidneys are from their earliest period bilateral organs. However, Buckhammer, in a contribution to the *Archiv. für Anatomie* for 1879, suggests that the organs of opposite sides coalesce across the mesial line, and that in subsequent development, when they tend to assume their normal adult position, according as the amount of adhesion has been great or small, we have a single compound organ to one or other side of the mesial line, or a symmetrical organ, with parts on each side of the vertebral column, but united across the column by an isthmus. He shows that such a coalescence is possible, for in an early embryo of a sheep he states that the primitive kidneys were found to be in actual contact in the middle line. This view Dr. Thompson ventured to adopt, but he thinks there is, as a rule, in addition, an arrest of development, and possibly a reversion of type, associated with, and perhaps determined by, the early abnormal union of the two organs. In support of this view, he looks upon the following additional points as having some weight:—

1st. In cases of single kidney with two ureters, when one ureter enters the bladder on each side, the one which crosses over is, so far as he can find out, invariably that which springs from the lower end of the composite mass, while the higher of the two keeps to its own side of the trigone at its entry into the bladder. This would bear out the view that in development after the union of the lower ends of the organs, when single kidney occurs, it is owing to a dragging (as it were) to one or other side of the whole mass in the assumption of the adult position.

2nd. It will be remembered that the *metanephros* from which the permanent kidney is developed is admittedly nearer the middle line than either the pro- or meso-nephros.

3rd. *The multiple arteries*, with some arising from common iliacs, which he thinks almost invariably occur with horse-shoe kidney, lend colour to the view of reversion of type, when it is remembered that birds have four, five, or six pairs. The upper ones arising from the aorta and the lower from the ischiatic, while crocodiles and alligators have three or four on each side.

4th. The lower site in the abdominal cavity, with the approach to a lobulated condition in No. 2, suggest an arrested development.

5th. Lastly, from the various descriptions of isolated cases which the author has met in looking up the literature of the subject, it seems that all grades occur from the merest adhesion of capsule across the middle line to the perfectly composite and unilateral mass known as one variety of single kidney.

Dr. Cunningham said while they all knew of the abnormality, yet it was not the lot of everyone to see four specimens, or to hear such a careful analysis of the cases, the literature being scattered and difficult of access. Dr. Thompson had no doubt put forward the right explanation of the abnormality.

The President thought, too, that the multiple supply of the kidneys pointed to the theory which Dr. Thompson had adopted. It would seem that the two had been united at some time in the middle line. Indeed, the only way in which he could imagine union would take place was that the segmental tubes, instead of taking the normal direction, met together in the meso-blast.

Dr. Thompson, replying, said mere adhesion of capsule could not be explained by any alteration in the direction of the segmental tubes, and he was not prepared at present to accept Dr. Birmingham's idea, but he would bear it in mind in his further investigations upon the subject.

Original Anatomical Investigation; Proposed Co-operative Investigation.

Dr. Cunningham stated, by way of Report, the result of the labours of the Committee of Investigation in connection with the Anatomical Department of Trinity College. He said the excellent results obtained by the method of Collective Investigation applied to the elucidation of disease led him, some years ago, to believe that much might be gained by the application of a similar method to anatomical investigation. To test the feasibility of such a project a small committee was organised at the beginning of the present Session in the Anatomical Department of Trinity College. The results have proved so satisfactory that he had now no hesitation in proposing that under the auspices of this Section of the Academy the scheme should be extended so as to take in all the anatomical departments in Dublin. He understood that Prof. Macalister had already initiated a similar project. In the programme of last week's meeting of the Anatomical Society in London it was announced that he

would propose a scheme of collective work. There was no one who was better qualified to deal with this question, or to take the lead in the work when the details were finally agreed upon. Prof. Macalister's own work on the Statistics of Anatomy was unsurpassed in this country, and he was satisfied that the scheme which he would propound would be in all respects satisfactory; and further, he would answer for the majority of Dublin anatomists and say that when the time comes they would be willing and ready to bear their share of the work. Until the general scheme proposed by Prof. Macalister was made known, and the preliminary details arranged, he considered they might with advantage make a trial of the project he had suggested in Dublin. He was not without hope that the reading of this Report will lead to some arrangement of the kind being arrived at. The Committee in the Trinity College School was organised in the following manner:—Having drawn up a list of a number of questions in Human Anatomy which he believed might very well be investigated by the senior students without making too great a demand upon their time, he invited members of the class to take part in the work. Instructions were given that each subject that came into the room should be examined with reference to the particular points under investigation. In this manner they obtained six energetic workers, all of whom (with one exception) had handed to him Reports.

1. Dr. Brooks, who kindly undertook a share of the work, had made a number of careful observations on the relation of the two pleural sacs to the anterior wall of the thorax. He had frequently been struck with the great variations which were exhibited in these relations, and suggested to Dr. Brooks that he should test the accuracy of the excellent accounts which are given by Luschka and others of the pleura. This he had done in his usual careful manner, and he would propose that instead of entering into the details of this part of the report Dr. Brooks should be asked afterwards to give them himself.

2. The next Report was by Mr. Robinson, who had dealt with the relation of the eighth pair of costal cartilages to the sternum. This was lately brought under notice through an article in *Science*, which stated that in America Dr. Lamb, of the Washington Museum, had ten specimens, in which the costal cartilages of the eighth ribs articulated with the sternum, and Dr. Lamb expressed surprise that so few knew anything about it, as in his search he was able to obtain only three references to it. In that he was wrong, for there was not a single writer of importance in Germany who did not mention the fact that occasionally the eighth rib was joined directly to the sternum. References to this condition are made in the works of Krause, Henle, Aeby, Hyrtl, Gegenbaur, Meckel, Oehl of Pavia, and Humphrey. Now Mr. Robinson's investigations established two points—first, the great frequency of the presence of an eighth true rib in man; and secondly, the different forms of attachment of the eighth

cartilage to the sternum—*e.g.*, the cartilage simply resting on the front of the ensiform cartilage, or the two cartilages touching each other in front, or a distinct articulation of the cartilage of the eighth rib to the lower part of the body of the sternum. Mr. Robinson had examined 70 subjects; of these 52 were brought into the dissecting rooms for dissection. Five were skeletons in the Trinity College bone-room, and in reference to these it was a curious coincidence that the condition was present in 3 of them. Eight were fœtuses in the stores of the anatomical department, 2 being anencephalous; and 5 were dried specimens. With regard to sex, 42 were females and 21 males, while in 7 the sex was not ascertained, but as in none of these the deformity occurred it did not matter. The total number of cases of this connection between the eighth costal cartilage and the sternum was 14, giving a percentage of 20. In 5 of the 14 cases the articulation took place upon both sides—and of these 5, 4 were males and 1 was an anencephalous female fœtus. The next point worthy of notice was that where it was unilateral 8 were on the right side, and only 1 upon the left side. The percentage of the unilateral right was 11·4, whereas the percentage on the left was only 1·4. Coming again to the matter of sex, it occurred in 7 males and in 7 females. From this it must not be inferred that it occurred equally in the two sexes. If it occurred equally in the two sexes then the proportion would be 4·7 in males and 9·3 in females, as the number of females examined was twice as great as the number of males. Therefore the abnormality occurred much more frequently in the male. This altogether failed to bear out the statistics brought forward by Hyrtl, of Vienna, who saw the condition in three females, and not seeing it in the male he was led to believe that it might be due to tight lacing, whereas, according to Mr. Robinson's investigation, it occurred more frequently in the male. The true explanation might be that possibly it had something to do with right-handedness in giving a slight degree of more basal support by extending one more cartilage to the sternum. The condition had a very interesting bearing on comparative anatomy, because the normal condition of the ape was to have eight true ribs on each side. It was not the case, however, in all the higher apes. It was so in the chimpanzee, but not in the ourang, or in the gibbon. The gibbon had its eighth cartilage extended forward, so as merely to touch the ensiform cartilage without articulating with it, whereas the ourang had the eighth just the same as in man. These constituted the most extensive and reliable statistics which had yet been made out on the point.

3. The next Report was by Mr. R. L. Heard, on the cervical rib, it being interesting to ascertain the relative frequency of this abnormality; but though Mr. Heard worked in a very efficient manner, he did not detect a single example of a cervical rib. He found, however, a condition present which was just as interesting—namely, a specimen consisting of a great

reduction in the size of the first rib. Looking at the specimen, an anatomist would be inclined to say at first sight that it was a cervical rib. It was reduced very much in width and in length, and its costal cartilage was replaced by a fibrous band, which carried it on to the upper corner of the sternum. The second rib was shaped after the fashion of the first. This anomaly was noticed by Struthers in 1853, and afterwards by Cruveilhier and some few others, including Luschka. Sometimes the first rib was reduced to an inch; there were varieties with fibrous band of different lengths. The fibrous band might be found attached to the stunted and ossified first cartilage, or, as in the present case, to the top of the sternum; and perhaps attachment to the second rib by bone or cartilage. Mr. Heard, feeling disappointed at his want of success in his search after the cervical rib, entered on the investigation of the Achselbogen muscle, with the result that in 5 female subjects he discovered 8 muscles. With regard to the origin of the muscle, in 3 of the abnormalities he discovered that the Achselbogen arose entirely from the surface of the tendon of the latissimus dorsi. In 3 he saw this origin combined with another origin, in which a large proportion of the fibres seemed directly continuous with the anterior border of the latissimus. Then in two cases in the same subject the Achselbogen was directly continuous with the latissimus dorsi, and was abnormally developed by forming a complete muscular floor for the axilla. Another point was one relating to the insertion—namely, in one case the dorsi-epitrochlearis arose directly from its tendon. In the majority of cases the nerve was destroyed, but where it was found it was conducted by a branch of the internal anterior thoracic nerve. From the attachment of these muscles, as presented by Mr. Heard, there was a good deal of conflicting evidence, tending, on the one hand, to support Dr. Birmingham's view and a different contention; for instance, that it was not a superficial muscle belonging to the paniculus, but a muscle belonging to the deep series. He was inclined himself to come to the conclusion that in the axilla there was not that sharp, well-defined subdivision between the paniculus and the deep stratum of muscles that existed elsewhere.

4. The next Report was that of Mr. R. R. Brunskill relating to the musculus sternalis. He examined consecutively 60 subjects for the musculus sternalis. In four of these he met with the musculus sternalis—that is, in two males and two females, and it was double in one male and in one female; so that he found six muscles. The nerve relations of the muscles were worked out with great care, but in no case was he able to trace any nerve fibres from the intercostal nerves into the muscle, but in all cases he found them more or less recurrent—*i.e.*, turning round the inner border of the muscle. The nerve supply in all cases came from the thoracic nerves; in the great majority from the external thoracic. In the female in which the muscle was double he found a

triple nerve supply to one and a double to the other; and in the triple supply two of the nerves came from the external anterior thoracic nerve and one from the internal. He met with it in 6·6 per cent., or 4 out of 60. The statistics put forward by Sir Wm. Turner, and confirmed by Prof. Macalister gave 3 per cent., while Grüber, of St. Petersburg, who examined 100 cases, found it in 5; and his statistics were probably nearer the truth than 3 per cent. In making out statistics himself from 400 subjects he got a percentage of 4·4.

5. Mr. Graham handed him the last Report, which was on the coraco-brachialis muscle, to which considerable interest had been given by Prof. John Wood. Mr. Graham examined 46 subjects and found the coraco-brachialis brevis in one.

The foregoing work had been useful in training the students in the methods of investigation and giving them an enthusiasm for the work. He therefore proposed that the scheme should be extended to other anatomical departments in Dublin.

The PRESIDENT said there could be no greater inducement to carry out Dr. Cunningham's project than the report which he had detailed, and he promised his hearty co-operation, while he had no doubt other teachers of anatomy would also lend their aid. In connection with the costal cartilages, it was interesting to note that the eight ribs were connected with the sternum on the right side so much more frequently than on the left, and the solution of it was apparently the more frequent use of the right arm, and followed by increased basal support, and therefore he would like to know whether there was excessive or thorough muscular development in those subjects in which the eighth ribs were found articulating on the right side. He thought there was an inclination to attribute too much to tight lacing. The results of the investigation of the Achselbogen were personally interesting to himself, since the theory which he tried to establish was that the Achselbogen was a derivative of the superficial Bogen or the paniculus, and some of the results tended to confirm that view, and others to overthrow it. Considering the homology he tested it by four criteria—namely, 1st, position; 2ndly, origin; 3rdly, insertion; and 4thly, nerve supply, the last, as Dr. Cunningham would agree, being the most important of these criteria, although he had condemned the too frequent use of such criteria. Some of the German authorities considered that the nerve supply was unchangeable, and that if they found a muscular slip supplied by a certain nerve they could by that means establish its identity. With regard to position there was nothing new. The Achselbogen was exactly in the position of the paniculus. As regards insertion the results described were all that could be desired from his theory. Neither was there anything new in the nerve supply, it was the old thing, the anterior thoracic, and there was no new nerve supply from any of the branches of the subscapular nerve as should be

expected if the muscle were derived from the latissimus dorsi. Lastly, muscles might become attached anywhere, or shift to an extraordinary extent. When the paniculus was developed, all they could say was that it was a superficial layer of the muscle plates; and, when it was not developed, they must say it had not been separated from the muscle plates. Then, if the paniculus was developed in one part and not developed in another, there was nothing extraordinary in finding a connection between them. With regard to the dorso-epitrochlearis, it would not be out of the way to consider that it had shifted its attachment in connection with the Achselbogan, and he did not think that the merely apparent shifting of origin was any great obstacle to the view that the Achselbogen was paniculus still.

Dr. Brooks observed, in connection with one of Mr. Brunskill's cases, that he had found a slip of muscle which had an attachment near the normal upper end of the rectus sternalis connected by a fascial band, and the muscles were cut and arrested half-way in the very act of rotation. As regards the Achselbogen, the long subscapular nerve was found going obliquely downwards, and entering some distance below its insertion; but any nerve-supply of the upper fibres could not be traced by ordinary means of dissection, and yet, of course, the upper fibres must have a nerve-supply. Likewise it would be impossible to trace the long or middle subscapular nerve to the lower fibres, and yet these must have a nerve-supply, the overwhelming probability being that they had their supply from the long subscapular nerve. But the fact of being unable to trace such fibres from the long subscapular nerve was only negative evidence. However, there were instances of muscles with true double nerve-supply.

Dr. Thomas Little entirely agreed with Professor Cunningham in reprobating the anatomical teaching which recognised a marked distinction between the superficial and deep layers of tissue. There was no analogy in the axilla to the superficial and deep fascial structures which existed in other parts of the body. It would be difficult to predicate from the situation of a muscle whether it was deep or superficial. The floor of the axilla was one of the situations in which abscesses tended to come to the surface, and this would be a condition of things to be expected if the anatomical arrangement to which he had referred existed. There was an absence of homological or similar structure to what was derived in other parts of the body; for instance, the deep fascia which formed over the muscles of the trunk.

The President said Galston had pointed out that in some animals the paniculus, where it passed over the margin of the latissimus dorsi, was sometimes so closely connected that it was impossible to say whether it was paniculus or latissimus. The paniculus layer was so complete there seemed a certainty that the latissimus passed into it. In four or five dissections he saw between the two a thin facial band. In such cases it

would be difficult to understand that the nerve passed along from the subscapular through the thin facial band to the muscle.

Dr. Brooks then communicated the result of his investigation on the reflection of the pleura and the anterior chest wall.

Dr. Myles testified from personal observation to the almost microscopic accuracy of Dr. Brooks' work, the results of which afforded valuable indications for tapping the pericardium. Having referred to the positions for aspirating, as mentioned by Stanley Boyd, Holmes, and Webb (*Med. and Chir. Transactions*, 1883, Vol. 66), he said there could not be the slightest doubt that Dr. Brooks' researches established that in every one of them the pleura would be wounded, except possibly when the distended pericardium shoved it in on the right side, an exception, however, which he himself did not accept.

The President said he was inclined to agree with Dr. Myles, that tapping the pericardium involved puncturing the pleura. In the normal state of affairs the pleura must lie behind the usual site of tapping. With regard to the suggestion that it was drawn back by the enlarging pericardium, the probable action of a distended pericardium would scarcely be seen to be the drawing back of the pleura. Nor was there anything to be gained by drawing it back, because when the pericardium was distended it brought the two layers together. There might be a little pleuritis set up by the puncture of the needle, and the immunity from trouble might arise when the two layers were bound together.

Dr. Cunningham did not agree with the view that the mere apposition of the surfaces would cause adhesion.

Dr. Brooks replied.

The President announced that the Secretary would summon a meeting of the Council, with the object of organising such a Collective Investigation, as recommended by Professor Cunningham.

A Case of Obturator Hernia.

Dr. J. Barton submitted a specimen of double obturator hernia, which was discovered in the dissecting-room.

The Section adjourned.

SECTION OF SURGERY.

President—Henry Fitzgibbon, Pres. R.C.S.I.
Sectional Secretary—Mr. W. Thornley Stoker.

Friday, March 29, 1889.

The President in the Chair.

Removal of the Thyroid Gland.

Mr. Corley read a paper on the above subject, and exhibited photographs of the patient before and after the operation. This had been performed on the 14th of May, 1888, and the patient attended the Section to let the members see the result. He was sixty-two years old, and the tumour had been thirty years growing—at first at a slow rate, but of late years, and particularly for the last five months, very rapidly. It had in its growth pushed the trachea and larynx to the right side and upward, so that the larynx could be felt at the angle of the jaw and the carotid beat on the mastoid process of the temporal bones. The case had been attended by Drs. Byrne and M'Laughlin, of Derry; and as of late the patient's breathing was becoming impeded, they recommended removal of the tumour after having first tried, without success, the effect of aspiration. No positive diagnosis was made, but it was thought probable that it was a bronchocele involving the whole thyroid gland.

On the 14th of May, 1888, the tumour was removed, and although there was comparatively little bleeding during the operation, there was most alarming and nearly fatal hæmorrhage just when the wound was sutured. This could only be restrained by plugging, a procedure which prevented rapid union and delayed the convalescence most seriously. At the bottom of the wound, at the upper part, the superior laryngeal nerve could be seen, and one of its branches was necessarily cut in the removal of the tumour. The recurrent was not seen. The tumour, when removed, was globular in shape, possessing a thick capsule and apparently perfect, without any trace of connection with any other glandular structure. The patient's voice, which had been but slightly affected by the pressure, was almost completely deficient immediately after the operation, showing that the two laryngeal nerves had been injured. It may be remarked that although the trachea had been so much displaced, the œsophagus was in its right place, and the trachea resumed its place immediately. On the 9th day after the operation the patient became delirious with great restlessness, sometimes violence and tendency to injure himself. He remained thus for 12 days, but eventually the delirium yielded to full doses of opium. The wound suppurated freely

and the ligature by degrees came away, the process still further delaying the union. The patient left on the 39th day, but the wound was not completely healed for nearly five months. The microscopic examination of the tumour proved it to be purely thyroid glandular structure; and, as it seemed the whole gland had been removed, the result of the case as regards the main constitutional condition was watched with much anxiety as well as interest. However, during the healing of the wound a small soft growth, about the size of a walnut, was detected surrounding the upper ring of the trachea, and it had all the characters of the thyroid isthmus a little enlarged. To its right side a soft slight swelling could be felt which seemed to be the right lobe of the thyroid resuming its natural size. The explanation which Mr. Corley offered for the original mistake of supposing the whole gland to be removed was this, that the hypertrophy of the left lobe in pushing aside the trachea had with it displaced the right lobe and isthmus, gradually drawing on the latter till its connection with the tumour became attenuated with an areolo-fibrous band which had been cut without notice during the operation. When the pressure was removed the remainder of the isthmus and the right lobe regained their former size.

The man is now in perfect health, and though the aphonia is still marked it does not interfere with his work, and very little with his comfort.

Mr. W. Thornley Stoker, having had an opportunity of seeing the case, bore testimony to the difficult nature of the operation, and the success achieved. One of the most remarkable features to be noted was the delirium that occurred during the convalescence of the patient; and this condition, he thought, was due to the removal of a gland, which, there was reason to suppose, was connected with the functions of the circulation of the blood through the brain. The removal of what constituted the chief part of the bulk of the gland accounted for it. Another leading feature of interest was the appearance of completeness in the tumour; it seemed as complete as any tumour enucleated from a capsule, and there was no indication of severance of gland structure. The case was sedulously watched on account of the belief entertained that the removal of the entire thyroid gland was necessarily fatal, as had been proved by Kocker and others. The removal of the thyroid gland was an operation which had met with a fair amount of attention in Dublin, where Mr. Hamilton was the first to perform it in Steevens' Hospital.

Mr. L. Hepenstal Ormsby had assisted at operations of this kind, and his experience was that the hæmorrhage was of a most alarming character, being on one occasion so great that they had to desist.

Mr. Edward Hamilton considered Dr. Corley had in this case achieved a triumph in surgery, as the operation was one of the most terrible in surgery. The hæmorrhage was so great and so difficult of control the

surgeon must hesitate to undertake the operation. The case referred to, in which he operated, was now of an almost archæological interest, twenty-four years having elapsed since the operation. In that case the patient, a girl of sixteen, suffering from mental anxiety on account of the hideous deformity, appealed to him to do something for her, and though there was a strong array of surgical opinion against the operation almost dissuading him from the attempt, he decided to do what he could. The hæmorrhage was alarming. In two days afterwards the patient was watched with the greatest care in the expectation momentarily of a gush of hæmorrhage that would carry her off. For many hours her pulse could scarcely be felt. Various methods of procedure had been proposed. He believed free incision was the most advantageous. It was possible sometimes to enucleate the gland, but the subsequent steps gave rise to great hæmorrhage. He had intended removing the tumour with an ecraseur, but he was forced to give up that idea and he transfixed the narrow part of the tumour and tied it in two sections. While it was not relevant to discuss other means, yet he would like to suggest the practice of electrolysis. He knew of three cases in which beyond doubt the disease was by that means controlled and the gland reduced to its normal size. Electrolysis was tedious and painful, but still he advocated it for the treatment of tumours of moderate size. The pathology of the treatment was not sufficiently understood. He believed the enormous number of needle punctures through the tissue produced a series of contracted cords which drew in the gland causing it to shrivel up. But such treatment for the case operated on by Dr. Corley would have been futile.

The President said the entire of the thyroid body had not been removed. There was a considerable portion, if not the whole, of the right side of the thyroid body with the isthmus left after the operation. The aberration of intellect showed that the brain was interfered with, and that the diseased portion removed was carrying on its functions up to the time of the operation, and that the opposite side was temporarily atrophied and its functions suspended. Thus when the removal of the diseased lobe was accomplished the patient was practically without a thyroid body until the atrophied side recovered its functions after the tension caused by the tumour was removed. It was interesting to observe that the mental aberration passed off when the temporarily atrophied side recovered itself.

Mr. Corley replying, said it was plain some part of the gland remained, and yet when the lump was taken away it was as whole and round and perfectly unconnected with any other gland as could be imagined. The capsule was remarkably thick, one-eighth of an inch. He remembered well Mr. Hamilton's case, and hearing from those who were present that the hæmorrhage was, as they expressed it, "something frightful." The most important case that came under his observation was that of Mr.

Thornley Stoker, in which the tumour was three times the size of the one in the case under notice. There was a large amount of hæmorrhage which however they did not think had had anything to do with the fatal result after the second operation. In modern practice, however, they had the great advantage of forci-pressure forceps in preventing hæmorrhage. With many catch-forceps the surgeon was enabled to control the hæmorrhage. Still the operation was one involving enormous responsibility, and Patrick Heron Watson, who had introduced it into these kingdoms, laid down that the surgeon must be prepared occasionally to see the patient die on the table, as had occurred in Edinburgh. Hence it was that in suitable cases other methods short of the complete operation ought to be tried. As to the delirium indicating that the thyroid gland had a good deal to do with the function of cerebral circulation he noticed a great many cases in which delirium followed serious operations, not necessarily operations connected with the neck or involving the vessels of the brain.

Arthrectomy or Erasion of the Knee Joint.

Mr. Heuston read a paper on this subject, and exhibited two of the patients on whom he had performed the operation, also mentioning the particulars of a third case still under treatment:—

Case I. was that of a boy, aged eight years, who had originally come under observation, suffering from separation of the superior tibial epiphysis and acute synovitis of the knee joint, which had recovered under treatment, but seven months later the patient had been readmitted to the Adelaide Hospital for sudden effusion into the joint, which not becoming absorbed and being accompanied by a temperature persisting between 100° F. and 102° F., induced him to aspirate the joint when it was found to contain pus. The joint was then opened for drainage about a month subsequent to his admission to the hospital, when the articular surfaces of the femur were found covered by a thick vascular membrane, and the synovial membrane elsewhere appearing thickened and vascular, the operator was induced to prolong the incision across the ligamentum patellæ in a crescentic manner, when the diseased synovial membrane and cartilages were removed by the scissors and scoop, the ligamentum patellæ and capsule being then united by hidden gut sutures, drainage being made from the popliteal space.

The patient made an uninterrupted recovery, primary union being obtained; the limb was placed in plaster a month subsequent to the operation, and the patient was discharged from hospital five weeks after operation. Six weeks later he returned to have the plaster removed, when the joint was found to have slight movement and there was no pain or swelling.

Case II.—The patient, a girl aged six years, was admitted into the Adelaide Hospital suffering from disease of the right knee joint, due to injury eighteen months previously. The joint which had been under treatment from the time of injury presented the characteristic evidence of strumous disease. After being under observation for a fortnight the joint was opened by a crescentic incision across the ligamentum patellæ and the diseased tissues, chiefly synovial, removed by scissors and scoop, drainage was obtained through the popliteal space and the structures united as in the former case. The patient did well after operation, primary union occurring, the highest temperature recorded being 99° F.

Twenty-seven days after operation the limb was placed in plaster which was removed prior to the discharge of the patient from hospital, two months after the operation, with a fairly movable joint presenting no evidence of disease.

The use of this operation was urged in strumous cases at an earlier stage than that usually selected for excision, and when local application and rest did not appear to arrest the slow and insidious advance of the disease to disorganisation of the joint, particularly where the disease appeared to be chiefly synovial, but that cases should be carefully selected; and the operation should not be regarded as taking the place of excision where the bones or cartilages were extensively diseased.

In suitable cases the result of the operation was most encouraging, although as yet it was not possible to decide the position the operation should hold in conservative surgery, as statistics to date were most misleading, owing to the number of evidently unsuitable cases in which the operation had been performed. It was then shown that the statistics gave about 63 per cent. of cures.

Mr. Thomson, speaking without personal experience of the procedure, said the latter part of Mr. Heuston's paper had not tended to remove any *à priori* objections which he had formed with regard to the operation. At the same time, the subject was specially interesting, because the operation which it was meant to displace had found a successful home in Dublin, and it was largely owing to the failures and mortality attending excision of the knee in England and the Continent, particularly in Germany, that the procedure advocated had been tried. Of late, however, better results from excisions of the knee were being obtained in England, whether or not these might be attributable to the influence of Dublin experience he could not say. But the two cases exhibited would not do much to establish the desirability of the operation of erasion of the synovial membrane. Take the case of the little girl. She exhibited, first, a very limited amount of motion; secondly, there was evidence of portion of diseased tissue remaining; and, thirdly, in reply to his question whether she had any pain she said "she had at night—that her leg jumped." He asked her to walk and they saw how she walked, Then

take the second case—that of the boy. His leg was pretty stiff, and there was still disease in the knee-joint. Moreover, the leg was fixed at a very bad angle, and the poor boy was unable to progress at all. The result would be that the case would probably go to either resection or amputation. One objection taken to excision in favour of removal of the synovial membrane was the avoidance of the danger of shrinkage, or the want of development of the limb which might occur after excision. But having seen many cases he had never seen want of development of the limb resulting from excision. Take away the epiphysis of the tibia or femur and there would be shortening. If the disease had gone through the bone and invaded the epiphyseal line either above or below, what advantage was there in taking out the synovial membrane alone? If the disease was there it must come away. But a short limb was better than no limb at all or a wooden one. Again, analysing the statistics, what was the result? Wright had published in his group 16 cases. How many recovered as a successful operation? Only one. Müller published 23. Of these 15 were cured locally; 5 were subjected to subsequent operations, and 2 got entirely well. Thus out of the 39 cases there were but 3 complete recoveries. Pursuing the subdivisions of the analysis out of Wright's 16, there were 5 that underwent amputations or excisions; and out of Müller's 23 there were also 5 that underwent subsequent amputation. With the foregoing results he asked was it gravely suggested that they should adopt erasion in preference to excision of the knee? There were cases, if they could be diagnosticated, in which the disease, being limited and reachable, a good deal might be done to remove the synovial membrane. He had himself excised a knee in which Wright perhaps would have erased the synovial membrane. There did not appear to be anything wrong with the cartilages or the bone. Determined to give the child a fixed limb, he took a section off the femur and went into a large cavity in the condyle in which there was a sequestrum the size of a small walnut. That was a proper case for excision. As to the subsequent treatment, he found the patients had to be kept in bed for months in stiff apparatus. Putting that treatment side by side with that of excision, the experience was different. The patient was given a stiffened, well-developed limb, and was moving about in a short time with a definite termination to his trouble. As soon as it was proved that removal of the synovial membrane was a definite termination to disease of the knee-joint he would adopt that method of surgical procedure.

Dr. Myles said there were three points of importance raised. First, the diagnosis of tubercular disease of the joint. Taking scrofula to be part and parcel of the tubercular affection, it seemed an illogical assumption that the removal of the synovial membrane so diseased would eradicate the condition which was the necessary antecedent to the tumour.

Removing the synovial membrane ought to have as little influence as scraping a tubercle on the general dissemination of tubercle. Next, he would like to know the basis of the diagnosis in the boy's case. The boy got an epiphyseal separation of the upper end of the tibia followed by separation of the knee-joint, but no reason was given for assuming that that was tubercular at all, and the operation applied to tubercular diathesis. Again, he asked how Mr. Heuston proposed to remove all the synovial membrane, bearing in mind that to destroy the disease it was essential to destroy the continuity of tissue? However, one of Mr. Heuston's cases was very successful, seeing the operation was performed only in January last. The girl walked and jumped on the diseased leg. While the mortality exhibited by the statistics which Mr. Heuston had cited was terrific, he hardly remembered a death from excision of the knee, and almost every case turned out well.

Mr. Kendal Franks was in the position of Mr. Thomson in not having done the operation, and he could, therefore, discuss it with an unbiassed mind. He regarded it as an entire mistake to put erasion in opposition to excision. The two operations, though done for the same disease, ought to be done at entirely different stages. Excision was performed when the disease had spread to an extent that removal of the bone was required, whereas, in the early stage Mr. Heuston advocated erasion. In surgery, conservatism was preferable to radicalism, and hence excision of the knee had found favour as being conservative surgery to prevent the limb from amputation, while erasion would be a step further in preserving the knee-joint from excision. He had himself opened the knee-joint intending to do an arthrectomy and found it necessary to do an excision. Erasion promised to be of great value if the results proved as good as had been stated. Mr. Thomson had alluded to a case where he opened the joint and found necrosis in the end of the femur; but all surgeons were liable to errors of diagnosis, and it was impossible to tell whether or not the disease was spreading to the bone. Mr. Myles had made an onslaught on the doctrine of tuberculosis in joints, but there was a great difference between general tuberculosis and localised tubercle. The large majority of those cases were tubercular diseases of the joint. It was no more difficult to remove the whole of the synovial membrane than all the disease when existing in the joints. He believed arthrectomy would hold its own when applied to the early stages of the disease.

Mr. M'Ardle denied that there was 10 per cent. of fatal cases following arthrectomy properly carried out. At the same time while there was no joint in which complete arthrectomy could be performed and leave a useful limb, he supported the operation Mr. Heuston had performed of partial arthrectomy.

Mr. W. Thornley Stoker thought "arthrectomy" was a ridiculous

name, excision being a more complete arthrectomy than what was so-called in the journals. The two operations were no doubt applicable at entirely different times. That of erasion was manifestly only applicable where the disease was confined to the soft tissues, and was inapplicable where the cartilage had extensive disease or the bone was diseased at all. He was prepared to give the operation a trial in a suitable case. But he protested against the absurd statements of the possibility of erasing joints through buttonholes made into their cavities. As regards shortening the limb, the experience here was that not only did the limb grow as long as its fellow where the epiphysis had been removed and the epiphyseal cartilage left uninjured, but even where the epiphyseal cartilage itself had been removed. He had dwelt on this natural compensation in a previous communication to the Section on the subject of excision of joints.

Mr. L. Hepenstal Ormsby thought Mr. Heuston would have been wiser to wait a little longer before bringing forward his cases. Speaking from his own extensive experience in the Children's Hospital, where those cases were numerous and frequent, he found they looked very well for a certain time. But some of them in six months returned for excision or amputation. He agreed with Mr. Stoker as to the misapplication of the term "arthrectomy."

Mr. Corley, while believing many would be led to try the operation, cautioned his brethren against substituting it for excision. He would himself try it tentatively in a case which he had at present that was suitable.

Mr. Heuston, in reply, said he had no idea of bringing the operation forward to replace excision, but only in suitable cases which must be picked. As regards the girl whom he exhibited he could find no traces of diseased tissue remaining. He had in both cases come prepared to perform excision if he found the operation necessary.

SECTION OF STATE MEDICINE.

President—S. M. MacSwiney, M.D., F.K.Q.C.P.
Sectional Secretary—E. MacDowel Cosgrave, M.D., F.K.Q.C.P.

Friday, April 26, 1889.

The President in the Chair.

Isolation in Infectious Diseases—an Explanation.

The President submitted a letter which he had received from Dr. Gairdner, of Glasgow University, explanatory of his views on isolation in infectious fever cases, arising from a quotation in his address on the subject at the previous meeting.

Dr. E. MacDowel Cosgrave, Sectional Secretary, read Dr. Gairdner's letter—viz., "In reference to your quotation from my old sanitary reports in the *Dublin Journal*, it may be well to remark that I was not then and am not now opposed in any way to isolation (like Dr. Fagge and Dr. Tidy), and I agree in the main with Dr. John William Moore and with you in your views on the subject. The position I was in at the time referred to was that (1) we had no power, except by a cumbrous and doubtful issue before the sheriff, to compel isolation, and (2) we had no hospital accommodation comparable to our present arrangements, which, though favoured by me in every way, were only fully carried out under my successor. At that time it was even considered *doubtful* whether we had legal powers to stop the selling of sweetmeats by a woman with smallpox pustules on her hands; and the Procurator Fiscal (or public prosecutor) told me that he threatened the woman after the fashion of the Scotsman who just *swore at large*, without being at all sure what he could have done if she had persisted in spite of him. All this is altered now. Dr. Russell not only isolates as far as he can, but frequently takes in whole families to his hospital when the young children are affected, and he has abundant space to do so, and separate wards for every kind of epidemic and for convalescents in each kind. If you now re-read what you have done me the honour to quote you will see that it expresses not my ideas, but my sense of difficulty and hopelessness in presence of the actual. 'The case being altered, alters the case,' as they say. But I believe that even now Dr. Russell would admit to you, or to anyone, that the problem as regards measles and whooping-cough, at least, is an extremely difficult one."

The Spread of Tubercular Disease by Contagion.

Dr. MacDowel Cosgrave read a paper on the spread of tubercular disease by contagion. The position of tubercular diseases has recently changed, and their contagiousness is now being widely recognised. The discovery of the tubercle bacillus by Koch in 1882, and the answers received by the Collection Investigation Committee in 1884, contributed to this. More recently Dr. Cornet's important experiments with dust from wards and other places where tubercular cases were treated, and experiments by Fischer, and Schill, and others, have shown that contagion is most easily caused by dried and desiccated sputa.

Professor Bang and Dr. Sims Woodhead have shown how milk from cows with tubercular udders contain bacteria, and so may be a source of infection.

It is probable that there is no true heredity in tuberculosis. Apart from intra-uterine infection the children of consumptives are in danger, because (*a*) they have deficient resisting powers; (*b*), because they are liable to contagion from their parents.

Contagion may be caused by (1) auto-infection.—This gives a clue for treatment, and explains how unlimited fresh air sometimes cures, as in a case reported by Dr. Neale in 1886. Dr. Weigert's treatment by inhalation of air, heated from 150° C. to 180° C., for three hours a day, is a discontinuous sterilising process. (2.) From animals.—The meat and milk of cows suffering from tuberculosis should not be used for food; the 400 dairy-yards in Dublin should be removed outside the city. Dairy cows and meat should be regularly inspected. (3.) From person to person, either directly or through fomites. The Registrar-General for Ireland has shown an apparent spreading of phthisis from towns to the surrounding rural districts. Many cases of direct contagion have been published by Dr. H. Bennett and others. The author knew of a telegraph operator who sat next a consumptive, and was affected fatally; also a lady of good health who nursed her husband whilst dying of pulmonary phthisis, and was for two or three years threatened with phthisis, but gradually overcame it.

Tuberculosis in Fowl.

Sir Charles Cameron read a paper on tuberculosis in fowl. He had, from time to time, received dead fowl for the purpose of analysis. They were individuals from large numbers that had died very rapidly, and, as it was believed, from poisoning, malicious or accidental. No poison was found, but, on the contrary, death was due to tuberculosis. The lungs, liver, and spleen were enlarged, and much affected. In one case, where about fifty hens had died within a period of three or four months, the deaths commenced to take place some weeks after the arrival of a consumptive patient in the house near which the hens were kept. There was little doubt but that the sputa of patients affected with phthisis were devoured by fowl, and no doubt, too, the inspissated sputa, in the form of dust, found its way into their lungs. Evidence was adduced to show that fowl affected with tubercle sometimes—when consumed as food—induced the disease in man. The bacilli in the fowl, though closely resembling the Bacillus tuberculosis of man, was decidedly smaller.

The President observed that both papers, dealing, as they did, with topics of the greatest interest to physicians, showed what revolution in opinion had in the last ten years taken place with regard to the nature of pulmonary consumption and tubercular disease. Thus, Cornet denied hereditary predisposition, and declared that nobody had immunity from tubercle who received the contagious particle in the way in which it was active; that it was never conveyed by the breath—a proposition which was not so generally acknowledged as the others—that it was not conveyed in a moist state; that expectoration was the medium of conveying the virus; and that it must be dried to acquire the active condition. Hence

his prophylactic advice that tubercular patients should not be treated in hospitals with other patients, and that they should not be allowed to expectorate on the floor or into handkerchiefs, but into spittoons, which, if emptied and cleaned with water, prevented danger.

Dr. Frazer said monkeys were also liable to be infected, and to such a degree that often the whole stock in the Zoological Gardens had been killed off. Perhaps they got it from the sputa in the house. No doubt a certain amount of predisposition was needful to receive the germs. At the same time, it was startling to find that dogs got the disease, and they were not predisposed to it. As regards treatment, it was remarkable that if cows gave the disease to human beings, as was now contended, the old Irish remedy used to be to sleep in a cowshed. He did not attach importance to the hot air plan of cooking bacteria, believing, as he did, that were a patient to stand in a glass-house breathing it the whole day, the hot air would not get down into the small cells of the lungs. Certain patients who did not cough in phthisis and who swallowed expectoration were those, of all others, who got extensive ulceration of the intestines—a proof of contagion in the individuals themselves. As yet there was no positive proof that any disinfectant destroyed bacteria. It seemed that the Jews were not far wrong in not eating meat until it was examined and seen to be free from disease, and also that it was immersed for a certain time in water before being cooked. The public could not hope to banish disease from cattle so long as the dirty and disgraceful habit of keeping cows in the city was allowed to exist.

The Registrar-General (Dr. Grimshaw) thought it would be unwise to lay aside the notion of predisposing causes. In his opinion there were predisposing causes in respect of nearly all diseases. Certain persons had a greater capacity for the reception of certain diseases than others, owing to their constitution and innate peculiarities; but that predisposition was the main element in contracting disease was, he thought, doubtful. Besides the predisposing cause of heredity, another very important element entered into the question of the spread of tubercular disease—namely, the condition of the soil. Many years ago Dr. Buchanan showed that in particular districts, with a particular stratification of soil, phthisis was prevalent, and that in certain towns in which the sub-soil had been drained the rate of mortality from consumption was materially reduced. It would not do, therefore, to ignore the consideration as to the condition of the sub-soil because of believing phthisis to be an infective disease. The difference of capacity of various domestic animals for the reception of tubercle might be explained on similar grounds. They all lived under different circumstances—for instance, a dairy cow in Dublin was a differently brought up animal to a dairy cow in the country, and a dairy cow in the country breathing the fresh air was not so liable to the disease as one in town. Again, the sheep which led an outdoor life was less

liable still than the cow. So, too, the bullock was more healthy—leading a short life and a merry one—than the cow, which had a long and a miserable one. There ought to be much more care exercised in the inspection of animals to be used for food than at present obtained. All such animals should be "passed" as in Germany. He did not see why there should not be compulsory inspection of animals to be slaughtered for food. Until inspection was enforced, and slaughter-houses in the city were absolutely abolished, and also the dairy yards, the public could not expect to get rid of the present state of things. No doubt, as Dr. Frazer indicated, a large number of the laws in the Jewish code were sanitary laws. It was now clear that leprosy was an infective disease in this country, and they had to go back to the Jewish system of preventing it, as well as to avoid being poisoned by tubercular meat and other products. In his opinion it was unnecessary that the tubercle should be dry. The ordinary conditions of respiration showed that particles of infection could be carried in a moist state, and he had not the slightest doubt that clerks suffering from phthisis, sitting in common with healthy young men, were vehicles of disease. In factories, where consumption was prevalent, the disease was ascribed to the closeness of the atmosphere, which was, however, but a secondary cause. A consumptive person being in the same room with a number of young girls, the disease spreads rapidly among them, and therefore consumptives should not be allowed to work with other people any more than a person suffering from scarlatina would. He had not the smallest doubt that consumption was increasing, and prevailed to a greater extent than ever, taking the country all over, while other diseases had been more effectively cut down.

Dr. Charles F. Moore regretted there were in his district several dairy yards in a most insanitary state, surrounded by high walls with closed gates, and the odour from the yards pervaded the neighbourhood. He had seen the cows standing in liquid filth, which was kept until fermented and then sold. The healthy qualities of the milk were materially affected under such conditions. In Lancashire and Yorkshire an attempt was being made to do away with the medical inspection of workshops and factories. He thought such legislation would be retrogressive and pernicious, and that medical inspection should be extended, not only to factories, but also to small workshops.

Mr. Doyle considered the term "infection" rather than "contagion" was the more correct in describing the propagation of tuberculosis. The bacteria were found in the lower stratum of the sputum, showing they were inclined to lie low, and were heavier than other constituents of the sputum, and therefore, as regards the communication of the disease by the breath, he did not think bacteria would be found floating about the atmosphere. Even in the tissue of the lungs and tubercular disease of joints it took a skilled microscopist to detect tuberculosis. The

great thing in combating the disease was prevention, especially by looking after the condition of the house drains. Indeed the tone of the papers read was enough to make them all vegetarians, from the lurking dangers stated to exist in milk, cattle, and fowl.

Mr. R. Montgomery asked whether the Section had arrived at the conclusion that phthisis was either an infectious or a contagious disease?

The President, referring to Dr. Moore's statement as to the movement to abolish the medical inspection of factories, trusted that the common sense of the country would not tolerate the proposal, but rather favour the granting of increased powers of medical inspection.

Dr. Cosgrave replied.—As regards the relative predisposition of domestic animals, dogs were very difficult to infect, it being only after sputa had been injected into their food for several weeks they took the disease. The same applied to other carnivora. The hospital cat, however, was usually observed going about in a consumptive state, while guinea-pigs and rabbits took it with facility. Dr. Weigert claimed that his hot air treatment succeeded, the expired air being 45° C., and the body temperature being raised one degree.

Sir Charles Cameron also replied. He said, in reference to the heredity theory, the only experimental evidence on which it rested was a solitary experiment by a German, who stated he found the bacillus in the ovum of a tuberculous cow. There was a tendency, no doubt, in certain people to acquire certain diseases, but to assume that the disease could be transmitted from parent to child it was necessary to believe the bacilli existed either in the ovum or in the male seed, and went on as the embryo developed, lurking in the system eighteen or twenty years. That hypothesis seemed incredible. There were elements which determined the nature of the individual, and which descended from the parents, but these were inconceivably minute. But that an object so large as a bacillus should remain twenty years in the system, and have originally existed in either the male or female, was quite incredible, and the statement of the German investigator must, therefore, be accepted with reserve. As to the difficulty of examining tubercular animals, there was no class that could be more readily detected—a mere stain would show the tubercular condition to the naked eye. Moreover, cases of the disease were marked by extensive ravages in the lung and viscera. The Committee of Investigation appointed last year, in connection with the operation of the Contagious Diseases (Animals) Act, had presented an important report, recommending, among other things, that tuberculosis infecting animals used as human food, should be included among the diseases the existence of which must be compulsorily notified to the authorities—such as pleuro-pneumonia, anthrax, &c.—on pain of prosecution.

The International Sanitary Congress.

In reply to Sir Charles Cameron, it was announced that the President and Secretary of the Public Health Section had been selected to represent the Academy of Medicine on the General Committee of the International Sanitary Congress, to be held in 1891.

Compulsory Registration of Plumbers.

Mr. Edgar Flinn read a paper on the compulsory registration of plumbers. The question of the registration of plumbers has very recently come into marked prominence, and efforts are being made throughout the United Kingdom to have an authorised and reliable register kept, but until there is compulsory registration a large percentage of insanitary work will continue to be executed.

The system of registration and examination for plumbers has been quite lately inaugurated in Ireland in connection with the London guild of plumbers. A certificate will in future be granted after examination, and already a large number of applications to be admitted have been received from master and operative plumbers.

A careful and conscientious man, engaged in this calling, has a certain responsibility, and is aware that on the good or faulty construction of the connections and drains of a house depend in a large measure the health of its inmates; he has nothing to fear from a compulsory registration scheme. Yet there is a class of men who do their work in a fraudulent manner, because of ignorance or anxiety to make excessive profits out of imperfectly executed work, and it is against such a class as this the public should have some safeguard.

The systematic inspection of house drains by the local authority through an expert is of great importance, and houses newly erected should be examined, and a certificate given that such work was satisfactorily and carefully executed. A public register should also be kept, recording the date of the inspection, the name of the contractor, and of the individual workmen who did the drainage and its connections. If a system such as this were in existence, and recognised by law, very few contractors and plumbers would scamp their work.

The Section of Public Medicine of the British Medical Association at Dublin, in 1887, recognised the importance of this question by unanimously passing a resolution as follows:—"That this Section, convinced of its absolute necessity in the interest of the common weal, is strongly of opinion that an organised and efficient system of registration of plumbers and of plumbing work should be put into force in all parts of the United Kingdom."

Dublin, Belfast, and Cork have established local committees to further the movement, and in due course of time we may confidently hope, in the interests of the public health, that this registration system will be generally adopted throughout the United Kingdom.

The PRESIDENT said many serious defects existed in the present system of plumbing work, and the adoption of registration as the result of examination was commendable.

SIR CHARLES CAMERON concurred as to the necessity of compulsory registration of plumbers, to insure plumbing work being properly done. The quicker excrementitious matter was removed to a distance from the dwelling the better, and he accordingly favoured the system of water carriage, putting in force the extensive powers of the Public Health Act to insist on privies being replaced with water-closets. As the result, between 7,000 and 8,000 privies had been replaced with water-closets in Dublin. Finding the work done badly by a class of operatives known as "handy men," he induced the Corporation to obtain a loan of £2,000 for the purpose of constructing improved sanitary accommodation, raising the cost of the expenditure either by imposing a tax spread over five years, or getting reimbursed by payment at once. Both Mr. Flinn and himself had taken an active part in promoting the movement for the registration of plumbers, and he hoped the Committee would not carry on its functions in any narrow spirit of exclusion or trade unionism, but rather endeavour to make the movement one for insuring the performance of good sanitary work.

MR. DOYLE could not agree altogether with Sir Charles Cameron. Before acquiescing in his view he would like to know whether the sewers, especially the main sewers, carried off the excrementitious matter. The best authorities on hygiene acknowledged that the only way to get rid of injurious matter was by having it removed daily from the premises and burned, and not letting it pass into a drain at all on the chance of its being carried away by means of a water system. Anyone who had been in the sewers in Paris could not help noticing the powerful engines that were needed to move the sewage along, whereas in the city of Dublin the sewage had been accumulating for years. He agreed as to the necessity of good plumbing, but even that which was done in the most efficient way would only last from ten to twenty years, and in Dublin it was said that the Vartry water had a deleterious effect upon it.

SIR CHARLES CAMERON said there was no sewer in Dublin that was not cleared out three or four times a year. The sewers were, however, sealed for twelve or fourteen hours every day by the tides. He agreed as to the desirability of effective main drainage.

DR. COSGRAVE said the daily removal of excrementitious matter through the streets in carts, however theoretically more perfect than water carriage, was a most abominable, dirty, and offensive system.

MR. FLINN, replying, said the disposal of sewage was a wide question which did not affect his paper. He hoped the registration movement would have the effect of getting rid of the class called "handy men," and that it would be conducted, not on trades' union principles, but upon a broad basis.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1888–89.

President—H. Burden, M.A., M.D.
Hon. Secretary—John M'Caw, M.D.

Wednesday, January 11, 1889.

Massage and Electricity; Some Points in their Therapeutics. By William Calwell, M.A., M.D.; Surgeon, Ulster Hospital for Women and Children.

It is with considerable diffidence that I venture to bring before you to-night the following few points. I fear greatly that the subject is already well known to most of you, but imagine it may not have been viewed in exactly the same light. Massage in the treatment of hysteria and paralysis is omitted; also electricity when used as an anodyne, as a tonic, in various forms of paralysis, both as a means of diagnosis and of treatment. Here, undoubtedly, excellent and wonderful results have occasionally been obtained, yet the therapeutical atmosphere is filled with that uncertainty that clings to a number of our mysterious "alteratives." It is with regard to their effect on the dissolution of pathological animal tissues that these two agents are considered.

What means have we of attacking the adventitious fibrous tissue, the result of organised inflammatory exudation? Drugs administered internally are useless, applied externally little better. The same statement can be made with regard to the majority of neoplasms.

Impressed as I have been for some time—an impression fast becoming a conviction—of the importance and nearly universal extension of what I take the liberty of terming the mechanical treatment of disease, it struck me that the spread of these two agents was a manifestation of this principle. What I mean by the mechanical method of treatment can be best explained by a couple of illustrations. Formerly medicines *ad infinitum* were given to remove ovarian cysts. Spencer Wells opened the abdomen, removed the tumour, sewed up the wound, a procedure whose *rationale* is intelligible to any trained mechanic.

Formerly we drugged internally and blistered externally for chronic arthritis, now we apply a Thomas' or similar splint, and send the patient to the seaside. Compare similarly tapping the chest *versus* Guy's pill, and

even Horsley's trephining *versus* the bromides. Recognising this tendency to avoid the intermediation of the stomach, the doubtful efficiency of the skin as an absorber, and the increasing desire to attack directly the seat of disease, and the success that followed this practice, I have often considered how far these two therapeutic agents were in unison with the spirit of the time.

Massage presents three distinct modes of action :—

1. From stimulation of the cutaneous nerve endings, there is reflex stimulation of other parts, as evidenced in quickened respiratory and cardiac action, and in increased peristalsis.

2. Another effect is increased circulation, both directly in the cutaneous vessels as evidenced by redness (only when wanted) ; and in deeper vessels, where it is probably reflex vaso-motor.

3. The third is the mechanical effect of squeezing on the lymph and thus increasing its flow.

The movement of joints to their full limit in all directions is embraced under the term massage. Now apply this mode of treatment to a knee-joint, with swollen and puffy structures, stiff and painful on attempted motion from implicated nerves, caused, let us say, by a chronic rheumatic affection. The movements, more extended each day, tear the fibres asunder; these fibres are further loosened by the manipulations, and the torn ends gradually soften, and are dissolved by the increased flow of lymph, supplied by the increased flow of blood. We have here, roughly it may be, a scientific basis for what empirically is now a well recognised fact, and many an extremity is converted by a simple mechanical series of movements from a useless and painful incumbrance into a serviceable and shapely limb.

A set of cases where undoubted benefit may be derived from this agent are those where brawny swellings, with stiffness and weakness, are left after erysipelatous inflammations in the limbs, and this was very well exemplified in a case of a woman with a curious fairly symmetrical swelling along each calf ; one was placed in spirit lotion and gutta-percha tissue ; the other was massaged. Much more improvement was observed in the latter, and subsequently both legs were treated with the usual manipulation with success.

Associated with the rheumatic joint is the rheumatic affection of nerves, where we could suppose the trunk of the nerve to be adherent to its sheath and adventitious tissue is excessive. In such the rapid improvement that takes place under massage treatment can be explained on rational principles, and it seems a much more scientific mode of treatment to so attack it directly than to trust to the reflex action of blisters, or to the possibility of such iodine as may be absorbed from external application, actually reaching the part it is intended to reach ; and if it does so, of altering what is really fibrous tissue. Iodine when absorbed causes

absorption of fluid effusions in cellular tissues, but not when such effusion is organised. It is probable that the chief value of many liniments depends on the vigour with which they are rubbed on.

As it throws some light on the action of massage, I shall mention the success in its employment in cases of recent ecchymosis and in hæmarthrosis. The blood clot is scattered and spread out in thin layers along the planes of tissues, and so exposed to the absorptive action of a much larger number of stimulated lymphatic capillaries than if allowed to remain in a solid lump. Similarly we find massage recommended in corneal opacities through the conjunctiva, and for enlarged prostate through the rectum; finally I would ask you to notice the close resemblance between massage used in the sense indicated, namely—the systematic stimulation, loosening, tearing of this fibrous tissue, and what actually happens in dilating a stricture of the urethra with bougies; this latter might be styled intra-urethral massage.

Turning to electricity, in the treatment of this adventitious tissue, where nature's repair itself constitutes a lesion, we find it recommended as dispersing the hyperplasia remaining after perimetritis, as lessening their bulk, and mastering the severity of the symptoms of uterine fibromyomata; similarly for naso-pharyngeal polypi; and again we have the now classical hundred consecutive cases of urethral stricture in the customary tabulated form treated with this agent, and also some cases of stricture of the lachrymal duct.

I think we shall better understand the rationale of this mode of treatment, and be more in a position to estimate its probable value, if we remind ourselves of a few simple and well known experiments. Putting the ends of two wires, connected with the positive and negative poles of a few ordinary galvanic cells, into water, decomposition into H and O gas occurs at the wires. Adding some salt—*e.g.*, NaCl to the H_2O, it also is decomposed at the wires—the negative electrode, or wire, having an alkaline reaction, due to formation there of caustic soda, the positive an acid, and the wire being corroded. Going a step further, put the wires into white of egg, it also is decomposed, a white frothy clot, due to bubbles of H, forming at the negative pole, easily removed and alkaline in reaction; a firmer one, sticking to wire, acid in reaction, and discoloured according to the metal used; the intermediate portion of the white of egg is unchanged until the disintegrating effects have spread to it. Going a step further still, and using any animal tissue, the same is seen, the tissue is decomposed in the immediate neighbourhood of the wires, and the intermediate unaltered, so that three distinct results are found—*i.e.* (1) Actual destruction of the part of tissue in immediate neighbourhood of wires, spreading slowly. (2) The liberation at negative pole of bubbles of H gas, displacing the fibres and necessarily loosening the firmness of tissue. (3) Further destruction of tissue at

negative pole by formation of caustic soda and potash due to these salts being in the serum.

Applying now this result to a case of stricture, we can clearly understand how the adventitious tissue causing the stenosis is removed, but also the extreme difficulty of removing, at all approximately, that which lies circumjacent, often far beyond the periphery of the tube; and how this tissue which is left, and the open wound left after operation will not contract—the great advantage claimed for the method by its advocates.

Applying them to (going back again to our needles) fluid blood in the freshly removed vein of an animal, we find that, besides the soft products of disintegration at each needle, the blood, probably from the contact with foreign body and the acid reaction at positive pole, soon clots. This is what happens in the electrolytic treatment of nævus, the clot organising and contracting, and excellent results have been obtained by this method. And now, remembering the power of galvanism of causing contraction in involuntary muscle, I think we have exemplified the numerous effects of Apostoli's form of treatment of uterine fibroid, namely :—

1. The actual destruction of a portion of the tissue in the neighbourhood of the needles.

2. The clotting of blood in the vessels in the neighbourhood of these needles.

3. The powerful tetanoid condition that the uterus is thrown into, closing blood vessels, and sometimes leading to the sloughing and enucleation of the tumours themselves.

The two former of these act in the case of any tumour, in fact in the case of any animal tissue; the second acts the more markedly, the more vascular the tissue, and so reaches its type in the nævus. And I wish that we had the results of electrolysis applied to some of the pedunculated cutaneous tumours so commonly found, easily removed by the knife afterwards, and examined microscopically, &c.

My desire has been in these few remarks to see how far we can attack this adventitious tissue, whether as a result of inflammation or of new growth, and to see briefly how far we can assign a scientific and reliable basis for the methods of procedure; and to do so I have brought forward three varieties of the condition as treated by massage, with the probable explanations, and have endeavoured to simplify the complex results of the effect of electrolysis on such a condition as a fibro-myoma, by exemplifying each of the individual actions.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C P. F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, June 15, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	May 25.	June 1.	June 8.	June 15.		May 25.	June 1.	June 8.	June 15.
Armagh -	5·2	25·8	25·8	10·3	Limerick -	32·4	22·9	20·2	18·9
Belfast -	21·6	22·9	22·7	25·9	Lisburn -	9·7	14·5	4·8	4·8
Cork -	15·6	26·6	18·2	22·7	Londonderry	12·5	21·4	16·0	14·3
Drogheda	46·5	29·6	38·1	29·6	Lurgan -	30·8	35·9	25·7	15·4
Dublin -	20·2	19·5	20·2	21·7	Newry -	21·1	24·6	28·1	21·1
Dundalk -	17·5	13·1	26·2	17·5	Sligo -	19·2	9·6	19·2	14·4
Galway -	6·7	23·5	3·4	3·4	Waterford -	9·3	11·6	18·5	32·4
Kilkenny	21·1	33·8	4·2	16·9	Wexford -	4·3	12·8	29·9	21·4

In the week ending Saturday, May 25, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 15·2), was equal to an average annual death-rate of 17·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·3 per 1,000. In Glasgow the rate was 28·6, and in Edinburgh it was 16·6.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 19·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in nine of the districts to 9·6 in Sligo. The 4 deaths from all causes registered in this district comprise 2 from whooping-cough. Among the 95 deaths from all causes registered in Belfast are 3 from enteric fever and 5 from diarrhœa. The 24 deaths in Cork comprise 1 each from typhus and diphtheria. Among the 24 deaths in Limerick are

3 from scarlatina and 1 from whooping-cough, and the 11 deaths in Drogheda comprise 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 197—99 boys and 98 girls; and the deaths to 142—72 males and 70 females.

The deaths, which are 38 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·0 in every 1,000 of the estimated population. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 20·2 per 1,000. During the first twenty-one weeks of the current year the death-rate averaged 27·4, and was 5·1 below the mean rate in the corresponding period of the ten years 1879–88.

Only 10 deaths from zymotic diseases were registered during this week, being 15 below the average for the corresponding week of the last ten years, and 7 under the number for the week ended May 18. They comprise 1 from measles, 2 from whooping-cough, 1 from ill-defined fever, 2 from enteric fever, 1 from erysipelas, &c.

Ten cases of enteric fever were admitted to hospital, against 6 for the preceding week, and 9 for that ended May 11. Nine enteric fever patients were discharged, 1 died, and 33 remained under treatment on Saturday, being equal to the number in hospital on Saturday, May 18.

The number of cases of measles admitted to hospital is 15, being 3 under the number for each of the two weeks preceding. Fourteen patients were discharged, 3 died, and 38 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, May 18.

Only 2 cases of scarlatina and 1 of typhus were admitted to hospital, against 4 cases of the former and 3 of the latter disease admitted during the preceding week; 19 cases of scarlatina and 7 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 37 in the week ended May 11 to 25 in the following week, further declined to 16, or 17 below the average for the corresponding week of the last ten years: the 16 deaths consist of 10 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, June 1, the mortality in twenty-eight large English towns, including London (in which the rate was 13·8), was equal to an average annual death-rate of 16·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·3 per 1,000. In Glasgow the rate was 25·4, and in Edinburgh it was 14·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in Waterford, Galway, Wexford, Dundalk, Lisburn, Lurgan, and Armagh, to 8·5 in Drogheda. The 7 deaths from all causes registered in the last-named district comprise 2 from whooping-cough. Among the 101 deaths from all causes registered in Belfast are 2 from enteric fever and 3 from diarrhœa; and the 41 deaths in Cork comprise 2 from whooping-cough and 1 from simple-continued fever.

In the Dublin Registration District the births registered during the week amounted to 249—122 boys and 127 girls; and the deaths to 133—66 males and 67 females.

The deaths, which are 56 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 19·6 in every 1,000 of the estimated population. Omitting one death of a person admitted into a public institution from a locality outside the district, the rate was 19·5 per 1,000. During the first twenty-two weeks of the current year the death-rate averaged 27·0, and was 5·3 below the mean rate in the corresponding period of the ten years 1879–88.

Fourteen deaths from zymotic diseases were registered, being 4 over the low number for the preceding week, but 12 under the average for the twenty-second week of the last ten years. They comprise 3 from measles, 5 from enteric fever, 3 from pyæmia, &c.

Thirty-five cases of measles were admitted to hospital, being 20 over the number of admissions for the preceding week. Fifteen measles patients were discharged, 2 died, and 56 remained under treatment on Saturday, being 18 over the number in hospital on Saturday, May 25.

The number of admissions of enteric fever cases, which had risen from 6 in the week ended May 18 to 10 in the following week, fell again to 6 this week: 9 patients were discharged, and 30 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Only 2 cases of scarlatina and 1 case of typhus were admitted to hospital. Twenty cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

Only 13 deaths from diseases of the respiratory system were registered, being 3 under the low number for the preceding week, and 21 below the average for the 22nd week of the last ten years. They comprise 6 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, June 8, the mortality in twenty-eight large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 17·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 23·4, and in Edinburgh it was 15·0.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 20·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in Waterford, Galway, Kilkenny, Wexford, Dundalk, and Armagh, to 8·5 in Drogheda—the 9 deaths from all causes registered in the last-named district comprising 2 from whooping-cough. Among the 100 deaths from all causes registered in Belfast are 1 from measles, 1 from whooping-cough, 2 from enteric fever, and 3 from diarrhœa; and the 28 deaths in Cork comprise 3 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 173—89 boys and 84 girls; and the deaths to 144—76 males and 68 females.

The deaths, which are 41 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·3 in every 1,000 of the estimated population. Omitting the deaths (7 in number) of persons admitted into public institutions from localities outside the district, the rate was 20·2 per 1,000. During the first twenty-three weeks of the current year the death-rate averaged 26·8, and was 5·3 below the mean rate in the corresponding period of the ten years 1879–88.

Eighteen deaths from zymotic diseases were registered, being 4 over the low number for the preceding week, but 10 below the average for the twenty-third week of the last ten years. They comprise 5 from measles, 1 from typhus, 2 from whooping-cough, 1 from diphtheria, 3 from enteric fever, &c.

Eleven cases of enteric fever were admitted to hospital, being 5 in excess of the admissions for the preceding week, and 1 over the number for the week ended May 25. Six enteric fever patients were discharged, and 35 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The number of admissions of measles cases, which had risen from 15 in the week ended May 25, to 35 in the following week, fell to 18. Nineteen patients were discharged, 2 died, and 53 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, June 1.

There were no cases of scarlatina, and only 1 of typhus among the hospital admissions for the week: 17 cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday.

Twenty-two deaths from diseases of the respiratory system were registered, being 9 over the low number for the preceding week, but 14 under the average for the 23rd week of the last ten years. They comprise 10 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, June 15, the mortality in twenty-eight large English towns, including London (in which the rate was 15·0), was equal to an average annual death-rate of 16·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·5 per 1,000. In Glasgow the rate was 23·2, and in Edinburgh it was 18·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in nine of the districts to 4·2 in Drogheda—the 7 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 114 deaths from all causes registered in Belfast are 2 from measles, 1 from whooping-cough, 1 from simple-continued fever, 2 from enteric fever, and 5 from diarrhœa. The 35 deaths in Cork comprise 3 from whooping-cough, and the 14 deaths in Limerick comprise 1 each from scarlatina and diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 158—87 boys and 71 girls; and the deaths to 150—79 males and 71 females.

The deaths, which are 28 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·2 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 21·7 per 1,000. During the first twenty-four weeks of the current year the death-rate averaged 26·6, and was 5·2 below the mean rate in the corresponding period of the ten years 1879–88.

Only 12 deaths from zymotic diseases were registered, being 13 below the average for the corresponding week of the last ten years, and 6 under the number for the week ended June 8. They comprise 1 from measles, 3 from whooping-cough, 1 from enteric fever, 1 from diarrhœa, 1 from dysentery, 1 from erysipelas, &c.

Nine cases of enteric fever were admitted to hospital, being 2 under the admissions for the preceding week, but 3 over the number for the week ended June 1. Eleven enteric fever patients were discharged, 1 died, and 32 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, June 8.

Twenty-two cases of measles were admitted to hospital, being 4 in excess of the admissions for the preceding week, but 13 under the number for the week ended June 1. Fourteen patients were discharged, 1 died, and 60 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 4 cases of scarlatina and 2 of typhus. In the preceding week no cases of the former and but

1 of the latter disease were admitted. Eighteen cases of scarlatina and 5 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered during the week is 20, being 11 below the average for the corresponding week of the last ten years, and 2 under the number for the week ended June 8. The 20 deaths comprise 8 from bronchitis and 10 from pneumonia or inflammation of the lungs.

Vital Statistics

For four Weeks ending Saturday, July 13, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	June 22	June 29	July 6	July 13		June 22	June 29	July 6	July 13
Armagh -	15·5	5·2	77·5	5·2	Limerick -	20·2	18·9	14·8	27·0
Belfast -	20·4	20·7	22·3	20·0	Lisburn -	0·0	19·3	38·7	19·3
Cork -	11·7	18·8	15·6	17·5	Londonderry	19·6	10·7	5·3	32·1
Drogheda	16·9	25·4	12·7	4·2	Lurgan -	15·4	20·5	25·7	10·3
Dublin -	18·3	22·6	22·2	15·9	Newry -	17·6	24·6	14·0	14·0
Dundalk -	13·1	4·4	8·7	30·6	Sligo -	14·4	9·6	9·6	4·8
Galway -	20·2	20·2	16·8	16·8	Waterford -	23·2	6·9	16·2	2·3
Kilkenny	25·4	25·4	12·7	8·5	Wexford -	21·4	21·4	4·3	12·8

In the week ending Saturday, June 22, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 14·9), was equal to an average annual death-rate of 16·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 22·3, and in Edinburgh it was 17·9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 18·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in nine of the districts to 9·6 in Sligo. The 3 deaths from all causes registered in the last-named district comprise 1 from whooping-cough and 1 from simple-continued fever. Among the 90 deaths from all causes registered in Belfast are 1 each from measles, whooping-cough and enteric

fever, and 6 from diarrhœa. The 15 deaths in Limerick comprise 1 from scarlatina, 3 from whooping-cough, and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 171—85 boys and 86 girls; and the deaths to 126—60 males and 66 females.

The deaths, which are 54 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·6 in every 1,000 of the estimated population. Omitting the deaths (2 in number) of persons admitted into public institutions from localities outside the district, the rate was 18·3 per 1,000. During the first twenty-five weeks of the current year the death-rate averaged 26·3, and was 5·3 below the mean rate in the corresponding period of the ten years 1879–88.

Only 8 deaths from zymotic diseases were registered, being less than one-third of the average number for the corresponding week of the last ten years, and 4 under the low number for the week ended June 15. They comprise 2 from measles, 2 from enteric fever, 2 from diarrhœa, 1 from dysentery, &c.

Fifteen cases of enteric fever were admitted to hospital, being 6 in excess of the admissions for the preceding week, and 4 over the number for the week ended June 8. Eight enteric fever patients were discharged, and 39 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

The number of cases of measles admitted to hospital is 19, being a decline of 3 as compared with the admissions for the preceding week, but 1 over the number for the week ended June 8. Twenty-five patients were discharged, and 54 remained under treatment on Saturday, being 6 under the number in hospital on Saturday, June 15.

No cases of typhus and but 2 of scarlatina were admitted: 2 cases of the former and 12 of the latter disease remained under treatment in hospital on Saturday.

Nineteen deaths from diseases of the respiratory system were registered, being 11 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended June 15. They consist of 12 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, June 29, the mortality in twenty-eight large English towns, including London (in which the rate was 15·2), was equal to an average annual death-rate of 17·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·4 per 1,000. In Glasgow the rate was 21·6, and in Edinburgh it was 14·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 20·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in Londonderry, Wexford, Dundalk, Lisburn, Lurgan, and Armagh, to 7·0 in Newry—the 7 deaths from all causes registered in the last-named district comprising 2 from whooping-cough. Among the 91 deaths from all causes registered in Belfast are 1 each from measles, whooping-cough and enteric fever, and 4 from diarrhœa; and the 14 deaths in Limerick comprise 1 each from typhus and whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 243—117 boys and 126 girls; and the deaths to 157—69 males and 88 females.

The deaths, which are 26 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·2 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 22·6 per 1,000. During the first twenty-six weeks of the current year the death-rate averaged 26·1, and was 5·4 below the mean rate in the corresponding period of the ten years 1879–88.

Eighteen deaths from zymotic diseases were registered, being 10 over the low number for the preceding week, but 10 under the average for the 26th week of the last ten years. They comprise 4 from measles, 2 from whooping-cough, 1 from simple continued fever, 6 from enteric fever, 2 from diarrhœa, &c.

Only 6 cases of enteric fever were admitted to hospital against 15 for the preceding week, and 9 for the week ended June 15. Seven enteric fever patients were discharged, 1 died, and 37 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, June 22.

Twenty-five cases of measles were admitted to hospital, being 6 over the admissions for the preceding week. Twenty-four patients were discharged, 2 died, and 53 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 2 cases of scarlatina and 2 of typhus—10 cases of the former and 4 of the latter remained under treatment in hospital on Saturday.

Twenty-nine deaths from diseases of the respiratory system were registered, being equal to the average for the corresponding week of the last ten years, and 10 in excess of the number for the week ended June 22. They comprise 14 from bronchitis, 11 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, July 6, the mortality in twenty-eight large English towns, including London (in which the rate was 16·2), was equal to an average annual death-rate of 17·7 per 1,000 persons living.

The average rate for eight principal towns of Scotland was 21·3 per 1,000. In Glasgow the rate was 25·7, and in Edinburgh it was 17·3.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 20·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in twelve of the districts to 4·3 in Belfast—the 98 deaths from all causes registered in that district comprising 1 from measles, 2 from scarlatina, 1 from diphtheria, 2 from enteric fever, and 13 from diarrhœa. The Registrar for Armagh District remarks—"The 12 cases of death by violence, and also described as inquest cases, were those who survived the injuries received in the railway collision (on the 12th ultimo) until they reached Armagh; the others, who were killed upon the spot, are registered in the Rich Hill Registration District."

In the Dublin Registration District the births registered during the week amounted to 192—103 boys and 89 girls; and the deaths to 154—77 males and 77 females.

The deaths, which are 1 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·7 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the first twenty-seven weeks of the current year the death-rate averaged 26·0, and was 5·2 below the mean rate in the corresponding period of the ten years 1879–88.

Fourteen deaths from zymotic diseases were registered, being 4 under the number for the preceding week, and 13 below the average for the 27th week of the last ten years. They comprise 2 from measles, 1 from scarlet fever (scarlatina), 1 from simple continued fever, 1 from enteric fever, 3 from diarrhœa, 1 from erysipelas, &c.

Six cases of enteric fever were admitted to hospital, being equal to the admissions for the preceding week, and compared with 15 for the week ended June 22. Ten enteric fever patients were discharged, and 33 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, June 29.

Only 10 cases of measles were admitted to hospital, against 25 for the preceding week; 21 patients were discharged, 3 died, and 39 remained under treatment on Saturday, being 14 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 1 case of scarlatina and 1 of typhus. Ten cases of the former and 4 of the latter disease remained under treatment in hospital on Saturday.

Twenty deaths from diseases of the respiratory system were registered,

being 2 below the average for the corresponding week of the last ten years, and 9 under the number for the week ended June 29. They comprise 11 from bronchitis, and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, July 13, the mortality in twenty-eight large English towns, including London (in which the rate was 19·3), was equal to an average annual death-rate of 21·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·6 per 1,000. In Glasgow the rate was 22·3, and in Edinburgh it was 16·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 17·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in nine of the districts to 5·4 in Limerick—the 20 deaths from all causes registered in that district comprising 3 from scarlatina and 1 from whooping-cough. Among the 88 deaths from all causes registered in Belfast are 2 from whooping-cough, 2 from simple continued fever, 1 from enteric fever, and 13 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 153—68 boys and 85 girls; and the deaths to 110—56 males and 54 females.

The deaths, which are 42 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 16·2 in every 1,000 of the estimated population. Omitting the deaths (2 in number) of persons admitted into public institutions from localities outside the district, the rate was 15·9 per 1,000. During the first twenty-eight weeks of the current year the death-rate averaged 25·7, and was 5·2 below the mean rate in the corresponding period of the ten years 1879–88.

Fourteen deaths from zymotic diseases were registered, being equal to the number for the preceding week, but 9 below the average for the 28th week of the last ten years. They comprise 2 from whooping-cough, 4 from enteric fever, 5 (all children under 5 years of age) from diarrhœa, &c.

Seven cases of enteric fever were admitted to hospital, against 6 admissions for each of the two weeks preceding. Six enteric fever patients were discharged, and 34 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, July 6.

The number of admissions of measles cases, which had fallen from 25 in the week ended June 29 to 10 in the following week, rose to 21 this week. Nine patients were discharged, 3 died, and 48 remained under treatment on Saturday, being 9 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 2 cases of scarlatina and 1 case of typhus; 8 cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday.

Only 15 deaths from diseases of the respiratory system were registered, being 9 below the average for the corresponding week of the last ten years, and 5 under the number for the week ended Jnly 6. They consist of 12 from bronchitis, 2 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of June, 1889.

Mean Height of Barometer,	30·077 inches.
Maximal Height of Barometer (on 5th, at 9 a.m.),	30·482 „
Minimal Height of Barometer (on 2nd, at 9 a.m.),	29·661 „
Mean Dry-bulb Temperature,	60·0°.
Mean Wet-bulb Temperature,	55·2°.
Mean Dew-point Temperature,	51·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·377 inch.
Mean Humidity,	73·3 per cent.
Highest Temperature in Shade (on 22nd),	74·8°.
Lowest Temperature in Shade (on 11th),	41·2°.
Lowest Temperature on Grass (Radiation) (on 11th),	36·3°
Mean Amount of Cloud,	42·4 per cent.
Rainfall (on 6 days),	·100 inch.
Greatest Daily Rainfall (on 8th),	·032 inch.
General Directions of Wind,	E., and N.E.

Remarks.

This month shows a marked resemblance to June, 1887, which will be long remembered as one of the driest and warmest months on record in Dublin. The mean temperature fell indeed 2·8° short of that of June, 1887, but it was still 1·7° above the average; the mean height of the barometer also was ·136 inch lower, but it was ·153 inch above the average for the month; and there was even a greater deficiency of rainfall than had occurred in June, 1887. Lastly, there was again a preponderance of easterly and north-easterly winds, with the same uneventful fine summer weather which was so characteristic of the Queen's Jubilee summer.

In Dublin the mean temperature (59·5°) was decidedly above the average (57·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 60·0°. In the twenty-four years ending with 1888, June was coldest in 1882 (M. T. = 55·8°) and in 1879 (the "cold year") (M. T. = 55·9°). It was warmest in 1887 (M. T. = 62·3°), in 1865 (M. T. = 61·0°), and

in 1868 (the "warm year") (M. T. = 60·5°). In 1886, the M. T. was 57·5°, and in 1888 it was 56·2°.

The mean height of the barometer was 30·077 inches or 0·153 inch above the average value for June—namely, 29·924 inches. The mercury marked 30·482 inches at 9 a.m. of the 5th, and fell to 29·661 inches at 9 a.m. of the 2nd. The observed range of atmospherical pressure was, therefore, 0·821 of an inch—that is, a little more than eight-tenths of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 60·0°, or 5·9° above the value for May, 1889; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) =*Mean Temp.*—from the means of the daily maxima and minima was 58·2°, or 1·6° above the average mean temperature for June, calculated in the same way, in the twenty years, 1865–84, inclusive (56·6°). The arithmetical mean of the maximal and minimal readings was 59·5°, compared with a twenty-three years' average of 57·8°. On the 22nd, the thermometer in the screen rose to 74·8°—wind E.N.E.; on the 11th the temperature fell to 41·2°—wind N.E. The minimum on the grass was 36·3° on the latter date. The rainfall amounted to only one-tenth of an inch (·100 inch), distributed over 6 days. There was no measurable rainfall in Dublin after the 14th, and not since September, 1865—when only ·056 inch was registered on three days—has so comparatively rainless a month occurred at this station. The average rainfall for June in the twenty-three years, 1865–87, inclusive, was 1·839 inches, and the average number of rainy days was 14·0. The rainfall and the rainy days, therefore, were remarkably below the average. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879 also 4·046 inches fell on 24 days. On the other hand, in 1874, only ·405 of an inch was measured on 9 days; and in 1868 only ·677 of an inch fell on but 6 days. In 1887, the rainfall was only ·252 of an inch, distributed over only 5 days; in 1888 it was as much as 3·045 inches, distributed over as many as 18 days.

High winds were noted on 5 days, but did not attain the force of a gale on any occasion. Temperature reached or exceeded 70° in the screen on 10 days, as compared with 17 days in 1887, and only one day in 1888. Luminous cirri were seen from Dublin on the northern horizon on the night of the 7th. There were no electrical disturbances in or near Dublin.

The first day of the month was cloudy, squally, and showery.

So far as Dublin is concerned, beautiful weather was experienced in the week ending Saturday, the 8th. Only on the afternoon of Monday and Saturday were conditions unsettled and slight rain fell. The amount of cloud at other times was small and much brilliant sunshine was enjoyed. At the beginning of the week an extensive depression, which had caused

a fresh gale and very heavy rain in the S. and W. of Ireland on Saturday the 1st inst., was passing away over the Atlantic. Temperature rose on Sunday the 2nd, to 82° in London, 83° at Cambridge, and 84° at Loughborough, and in the afternoon violent thunderstorms, with hail, occurred in many parts of Great Britain. An area of high pressure now advanced northwards over the British Islands from France and beautiful weather set in, lasting until Thursday. Towards night on this day a small depression developed over the eastern part of the English Channel and severe thunderstorms again became prevalent in England. On Saturday another depression appeared in the N.W., causing some rain in Dublin. The approach of this system was heralded on Friday night by the appearance of luminous clouds on the northern horizon. In Dublin the mean pressure was 30·078 inches—highest, 30·482 inches at 9 a.m. of Wednesday (wind, E.); lowest, 29·661 inches at 9 a.m. of Sunday (wind, S.E.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 59·0°. The mean of the maxima and minima combined was 58·4°. The shade thermometers rose to 71·3° on Thursday (wind, E.), and fell to 44·1° on Saturday (wind, W N.W.). Rain fell on two days to the amount of ·044 inch, of which ·032 inch was registered on Saturday.

During the second week (9th–15th, inclusive), strange contrasts of weather were experienced in different parts of the United Kingdom. Thus, while clear skies and brilliant sunshine reigned supreme in Ireland during the first three days, over the greater part of England there were gloomy skies, low temperature, strong N.E. winds, and heavy rains. Whitsun Monday, the 10th, which was a cloudless day in Dublin, was cold and wet as a day in midwinter in London. This singular contrast was brought about by the presence of a trough of low barometrical pressure over the north of France, Holland, and Denmark, while the barometer was high and rising in Ireland and Scotland. After Tuesday this distribution of pressure gave place to irregular and slight gradients for S.W. and W. to N.W. winds, so that the weather became less settled in Ireland, but improved in England. In Dublin the mean height of the barometer during the week was 29·933 inches, pressure ranging between 29·833 inches at 9 p.m. of Thursday (wind, S.S.W.) and 30·090 inches at 9 p.m. of Saturday (wind light from N.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57·8°, while the mean of the daily maxima and minima was 57·7°. Temperature in the screen rose to 68·5° on Thursday (wind southerly), having fallen as low as 41·2° on Tuesday morning (wind, N.E.). The rainfall was only ·046 inch, distributed over three days. Since June 1 only ·100 inch of rain had fallen in Dublin, on six days. Up to Saturday, the 15th, 1·960 inches had been measured in London, on however only five days.

Quiet, summerlike weather prevailed in Ireland throughout the third week (16th–22nd, inclusive). Less settled conditions, with fresh N.E.

winds, and at times a good deal of cloud, were reported from Great Britain. All through, an anticyclone of medium intensity held over the British Islands, while areas of relatively low pressure appeared from time to time over the Baltic and Germany and France. The first three and the last two days were almost cloudless in Dublin, although the atmosphere was hazy. During the earlier part of Wednesday and Thursday the sky was overcast, but in the afternoons of both these days the cloud canopy broke up. There were some heavy thunderstorms in France each day after Monday. In Dublin the mean height of the barometer was 30·180 inches, pressure ranging only from 30·260 inches at 9 a.m. of Tuesday (wind, E.), to 30·118 inches at 9 p m. of Thursday (wind, calm). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 61·2°, while the mean daily maxima and minima combined were 60·3°. The screened thermometers rose to 74·8° on Saturday, having fallen to 49·9° on Sunday. There was no rain during the week. The wind varied between E. and N., except sometimes at night when a light westerly land breeze was felt in Dublin. On Wednesday and Thursday the easterly wind freshened considerably.

The period from the 23rd to the 29th inclusive was another week of quiet, summerlike weather. After Tuesday, the easterly breezes, which had been so prevalent, gave place to light and variable, or moderate, westerly winds. Barometrical gradients were slight and irregular throughout. On Tuesday and the two following days thunderstorms occurred in different parts of France. In the British Islands only a few showers fell during the week. After Tuesday daily maxima of 80° or upwards were recorded at several English stations. In Ireland the thermometer rose (at Parsonstown) to 77° on Sunday. In Dublin the mean height of the barometer was 30·128 inches, pressure ranging from 30·044 inches, at 9 a.m. of Monday (wind, E.), to 30·273 inches at 9 a.m. of Saturday (wind, N.W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 62·2°. The mean temperature deduced from the daily highest and lowest readings was 62·0°. The shade maxima exceeded 70° on four days—the absolute maximum being 72·5° on Wednesday (wind, W.N.W.). The minimum for the week was 52·1° on Tuesday (wind, calm). A few large "spots" of rain were observed about 5 p.m. of Wednesday, and at 8 p.m. of Saturday a light shower fell, yielding only three-thousandths of an inch of water—less than the standard minimal rainfall for measurement.

Sunday, the 30th, was at first cloudy and then fair. In the afternoon the air was very dry, and a peculiar yellowish-grey haze overspread the sky.

The rainfall in Dublin during the six months ending June 30 has amounted to 10·576 inches on 97 days, compared with 12·113 inches on 87 days during the same period in 1888, 6·741 inches on 67 days in 1887, and a 23 years' average of 12·399 inches, on 95·7 days.

At Greystones, Co. Wicklow, the rainfall in June, 1889, was ·15 inch, distributed over only 2 days. Of this quantity ·13 inch fell on the 3rd. Since January 1st, 13·26 inches of rain have fallen at Greystones, on, however, only 53 days.

PERISCOPE.

CAULOPHYLLIN AND PULSATILLA AS EMMENAGOGUES.

In a paper on "Uterine Medicines" (*The Lancet*, June 8, 1889), Mr. Naunton W. Davies F.R.C.S. Edin., of Bridgend, Glamorganshire, having pointed out how disappointing are most of the medicines which are supposed to act upon the uterus and its appendages, and influence the menstrual habit in women, writes thus of caulophyllin and pulsatilla:—"Of the long list of remedies noticed, there remain caulophyllin and pulsatilla, and of these much can be said of a favourable nature. Caulophyllin, the resinoid prepared from Caulophyllum thalictoides, known in America under the various names of squaw root, pappoose root, and blue berry, has been recognised in that country as a valuable therapeutic agent from very early times, and has been highly spoken of by many American physicians of note. Its name, 'pappoose root,' suggests the uses it was put to by the natives long before the cultured minds of our American cousins investigated its properties and catalogued its claims. There seems to be a general agreement amongst those who have studied its action that its effect is chiefly felt by those motor nerves which are connected sympathetically with the menstrual organs, and that this action is of a sedative character, allaying that irritable condition of the generative system which so often lies at the root of functional irregularities. As a remedy in these derangements, in 'irritable neurotics,' especially when they are marked by disturbance in the sacral plexus, it has undoubtedly acquired a sounder reputation than most of its competitors, and deserves a permanent place in the select circle of approved remedies. But its action, although often favourable when administered alone, is much more reliable when given in combination with pulsatilla (Anemone pulsatilla, pasque flower), which has long been known as a popular and effective remedy in uterine functional derangements. I remember not long ago being consulted by an old lady about a young friend of hers who was suffering from advanced anæmic symptoms, and had been the subject of long-standing amenorrhœa. She told me that the patient had been treated by several eminent doctors, and that they had failed to bring on the 'period.' 'So I gave her some pulsatilla,' remarked the old lady, 'and brought nature to its senses.' This story served to fix the remedy in my mind, and encouraged me to test its efficacy, which I have since done

with good result. A few years ago it was well spoken of by Dr. Brunton and Dr. Gerard Smith as a sedative agent of much power in the treatment of inflammatory states of the testicle and spermatic cord, producing such rapid abatement of pain as to supersede even the necessity for morphin. As pulsatilla increases the beneficial action of caulophyllin, so the latter increases the action of the former, and it is therefore when they are both combined that we get the most perfect emmenagogue that our present state of knowledge has yet suggested. Indeed, it is not too much to say that this compound emmenagogue redeems from the charge of imposture the reputation of its dilapidated class." We understand that the preparation used by Mr. Naunton W. Davies was Messrs. Oppenheimer's (Oppenheimer, Brothers & Co., 1 & 3 Sun-street, Finsbury-square, London, E.C.).

THIOCAMF.

THIOCAMF is the name of the new disinfectant introduced by Professor Emerson Reynolds. It is produced by the action of camphor on sulphur dioxide, which produces a liquid substance, in which certain medicinal agents are dissolved. Its value consists in the fact, that when the liquid is exposed to the atmospheric air, at ordinary temperatures, relatively enormous volumes of sulphurous dioxide gas are liberated. The value of sulphurous oxide gas as a bactericide has been recently placed beyond doubt by experiments carried on under the direction of Dr. Dujardin Beaumetz.

REJUVENESCENCE OF THE HAIR OF THE HEAD AND BEARD.

DR. WILLIAM O'NEILL (*Lancet*, July 20th, 1889) records a case of rejuvenescence of the hair of the head and beard in a patient sixty-five years of age, who had been both bald and grey-haired. This remarkable occurrence was ascribed by the patient and his friends to the use of chlorodyne, of which he took two or three teaspoonful doses, or more, several times a day, for the relief of violent pains in his limbs, to which he was subject.

CASCARA SAGRADA.

REFERRING to the unsightly mixture produced when water is added to the official liquid extract of cascara sagrada, Dr. Irving says that this may be entirely obviated by the addition of a very small quantity of ammonia solution, which clears it to a bright ruby colour seen by transmitted light, the transparency of which is not affected by the addition of a flavouring agent such as tincture of orange or by saccharin (*Brit. Med. Journ.*, Sept. 22, 1888, p. 691). It can then be dispensed clear with iron preparations, such as citrate of iron and ammonium, a combination which Dr. Irving says he has found serviceable, with or without small doses of digitalis, where the heart is enfeebled and constipation exists. Mr.

Martin also reports (*Lancet*, Sept. 1, 1888, p. 420) that he has succeeded in subduing the pain of rheumatism after sodium salicylate had failed, by administering cascara sagrada in combination with that salt, the proportions being 15 grains of the salicylate with 10 minims of the liquid extract in orange flower water every three or four hours.—*Pharm. Journ.*, Sept. 29, 1888.

CHLOROFORM ANÆSTHESIA.

Dr. Strassman, from some experiments on dogs, declares that prolonged chloroform anæsthesia produces fatty degeneration of the viscera. He found that the liver was the first organ affected. [Such experiments, unless given in detail, are of no practical value. The question of chloroform *versus* ether will probably long continue to be a subject of dispute with the profession.—Ed.]

WHOOPING-COUGH.

Dr. Robert Lee (*British Medical Journal*) reiterates his favourable opinion of carbolic acid vapour as a remedy for whooping-cough. [Amongst the recent remedies—not to mention alum, nitric acid, hydrocyanic acid, chloroform, belladonna, butyl chloral, gas fumes—are insufflation of quinine (Swett and Forchheimer), sulphur fumigation (Manby), antipyrin (von Genser, Laborde, Geffrier, Griffiths), salicylate of bismuth (d'Heilly), hydrochlorate of quinine (Fervers), resorcin (Moncorvo), oxymel of squills (Widowitz), jaborandi (Keyes), peroxide of hydrogen (Bleyer); a list sufficiently long to satisfy the profession that a reliable remedy is still a desideratum.—Ed.]

LINACRE.

It is proposed to place a memorial window to Linacre in the parish church of Mersham. [Linacre, by founding the College of Physicians, dissolved the medical union of cleric and physician which had so long existed, of which union the memorial window in Mersham Church will remind visitors; and it may also help to recall the fact that the personal friend of Leo X. was Rector of Mersham, the guest of Lorenzo the Magnificent, and for a time the companion of Erasmus.—Ed.]

ABNORMAL INFERIOR THYROID ARTERIES.

At a meeting of the Montreal Medico-Chirurgical Society (Feb., 1889), Dr. Shepard exhibited a specimen of a rare anomaly of the inferior thyroid arteries. The right artery took its origin from the common carotid artery, about on inch from its commencement. The left came off from the innominate artery, crossed over the trachea, and supplied the left lobe of the thyroid. On its coming across the trachea, it gave off a small middle thyroid artery.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

SEPTEMBER 2, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Congenital Malformations and Contractions of the Hand and Fingers, arising from various Causes.* By WILLIAM ARMSTRONG ELLIOTT, Fellow of the Royal College of Surgeons, Ireland; Senior Surgeon to the Whitworth Hospital, Drumcondra.

AMONGST the various ailments to which the human frame is liable, there are few which require more careful consideration and judicious treatment than those affecting the hands—the mechanism of which has been wisely and beautifully designed for fulfilling the various functions which man was destined to perform. They become instruments of protection, and by their expressive movements are capable of conveying mental emotions, and form a medium of communication for the interchange of our ideas with those who are deprived of the senses of hearing and speech. Through the medium of the sensory nerves, which supply the extremities of the fingers, blind persons are enabled to read, when aided by the raised type which has been ingeniously devised for their use. So accurate is the sense of touch that, by pressing the point of the finger on the type, each letter can be distinguished by its shape, the impression of which is instantly transmitted to the brain. The hands, whilst possessing keen sensibility and minute delicacy of touch, are also endowed with an amount of physical strength and prehensile power whereby man, in every sphere of life, has been enabled to work for his subsistence.

The hand being so much exposed to injury, renders it more

liable to be deprived of its usefulness than other members of the body. Irrespective of local injuries, which may be considered the proximate cause, there are also remote causes which tend to impair the functions of the hand.

We are aware that the movements of the hands and fingers are not performed by the hand alone, but by the combined action of the hand with the shoulder, elbow, and wrist-joints, and joints of the fingers. It is by this conformity of action that the hand and fingers are rendered capable of performing their functions with such minuteness, facility, and precision.

The most frequent causes by which the functions of the hand become impaired are those arising from injury, constitutional causes, congenital malformations, and nervous affections. I have adopted this arrangement according to the order and frequency in which those cases usually occur. The nature of the various injuries, and the mode of treatment suited to each particular case, present a field too extensive to enter fully upon in the present communication.

In persons of strumous diathesis, the osseous structure of the hand frequently undergoes alteration in shape, resulting from specific inflammation, which usually commences in the cancellated structure of the bone. When suppuration takes place, the matter being of an unhealthy and irritating character, it tends to promote either absorption of the cancellated structure, or exfoliation of the dense portion of the bone. During this stage of the disease the metacarpal bones and their phalanges may become distorted—an event which, with our best efforts, is difficult to counteract.

In gouty constitutions the hands and fingers frequently become altered in shape, caused by the urate of sodium, which is deposited round the extremities of the metacarpal bones and their phalanges; incrustations are thus formed, which become so much increased in extent and in density as to deprive the affected joints of their normal powers of flexion and extension. The latter motion becomes gradually limited, and can only be attempted with pain and difficulty. In this stage of the disease the weight and helpless condition of the hand causes it to droop, and by the predominating action of the flexor muscles over the extensors, the metacarpal bones, with their phalanges, are drawn backwards. Consequently the posterior portion of the wrist becomes round and prominent, with a corresponding arched condition of the palmar aspect. Fig. No. 6 represents accurately a case of this description.

Contraction of the palmar fascia is an affection which has been described by some authorities as Dupuytren's contraction of the hand, that eminent surgeon having been one of the first who accurately described the pathology of this disease. Since that period the nature and treatment of this affection has attracted the attention of many other surgeons, whose opinions have been recorded relative to the ætiology and treatment of this disease. Some discrepancy of opinion still exists relative to the ætiology of this affection.

It has been considered by some that the contraction is attributable to the laborious occupation of the individual. I have examined persons belonging to various trades, and although I have occasionally recognised a form of contraction of the hand and fingers, which in some respects simulated the affection described by Dupuytren, yet upon careful examination I ascertained that the contraction was produced by a thick, indurated condition of the palmar skin, not by contraction of the fascia.

Some authorities on this subject have directed attention to the finger which first becomes affected. I have usually found the contraction commencing in the second, third, or fourth finger—I should say most frequently in the last. I have seen it commencing in the palm of the hand, and afterwards extend to the two middle fingers, but this is rather an exceptional occurrence.

Some years ago I published some observations relative to contraction of the palmar fascia, and the mode of treatment. But since that period I have attended several persons suffering from this affection in its various stages. Having some years afterwards been afforded opportunities of examining many of those upon whom I had operated, being thus aware of the results of the treatment, I am induced to contribute some further observations relative to this subject, with records of some of the cases which had been under my care, with diagrams representing the condition of the hands before and after the treatment.

The majority of cases of palmar-fascial contraction which have come under my observation were persons of gouty diathesis, and never accustomed to manual labour.

Dissections of this disease have demonstrated that the flexed condition of the fingers is caused by contraction of the fascia at its lower portion, where it becomes bifurcated above the metacarpo-phalangeal articulation, from which parts bands of the fascia are inserted into each side of the upper parts of the first phalanges.

The sheaths in front of the fingers also become contracted, but as no adhesions are formed between the tendons and their sheaths, the action of the tendons is unimpeded.

The contraction takes place slowly, but when the fingers become flexed a remarkable change may be observed in the palm of the hand. The two transverse lines, particularly the lower, become deepened, and the skin at those parts becomes thickened and adherent to the portion of the fascia which lies beneath it. At this part a wrinkle is generally formed, the concavity looking downwards, the convexity upwards, and closely adhering to the subjacent structure. As the contraction progresses, in an equal ratio will the process of shortening take place, which ultimately will be found capable of resisting the most forcible extension which, with safety, can be adopted. From this state of contraction it will be impossible to release the parts until the fascia has been divided.

Case I.—Mr. M. consulted me for contraction of the two middle fingers of his right hand. In this case the contraction commenced in the palm of the hand, and gradually extended to the two middle fingers. After some months the first and little finger also became contracted. The palmar fascia was tense when traced downwards from the annular carpal ligament. In the palm of the hand it was prominent, hard, and unyielding. Near the metacarpo-phalangeal articulation it became identified with a mass of hypertrophied integument, which was thick, firm, and elastic. In this thickened mass the outlines of the contracted fascia were lost, but were again easily felt where the fascia passed downwards to form the bifurcation supplying the two middle fingers, which were flexed, and rigidly approximated to each other, forming right angles with the palm of the hand. The palmar skin was wrinkled and tense, and felt as if adherent to the subjacent structures along the course of the contracted fascia.

Previous to commencing the operation I secured the hand and fingers upon the instrument (see Fig. 11), by means of which I was enabled to extend the contracted parts as much as they would admit of. The fascia being thus rendered tense throughout its entire extent, the limb being firmly held by an assistant, I passed a small sharp-pointed bistoury under the hypertrophied integument. I then cut slowly backwards, and when the contracted portions of the fascia were completely divided the palm of the hand became flaccid, but the third finger having remained slightly flexed, I divided the contracted portion of the fascia supplying the inner side of the finger. This being effected, all tension of the parts was removed. I then placed dry lint over the two small punctures made in the skin, which soon healed, and on the third day after the operation I

commenced the subsequent treatment, which consisted merely in the gradual extension of the hand and fingers by means of the same instrument (see Fig. 11), which I applied for a few hours each day, and immediately after its removal I applied a light wooden splint (see Fig. 5), which was worn by day and by night.

Twelve days after the operation my patient returned home, all contraction of the hand and fingers having been removed. I gave him directions to continue the use of the wooden splint by day and by night for some months, to prevent any recontraction of the parts. This gentleman called upon me some years afterwards. No return of the contraction had taken place, and he had the perfect use of his hand.

Fig. 7 represents the state of the hand before operation; Fig. 8, the state of the hand after operation and treatment.

Case II.—Doctor B., one of our leading Dublin obstetricians, consulted me respecting contraction of the third finger of his right hand. The finger was flexed at a right angle with the palm of the hand; the fourth finger was also slightly flexed; the palm presented the usual deepening of the two transverse lines, and wrinkled condition of the palmar skin.

From long acquaintance with Doctor B., and being aware of his having had several attacks of gout, I gave him my opinion respecting the nature of his case, and the necessity of dividing the contracted portion of the fascia, but said that before doing so it would be advisable to have the opinion of his friend, the late Surgeon Robert Adams. To this he consented, and the consultation was accordingly held. The opinion given by Surgeon Adams was, "Better to bear the ills you have, than fly to others you know not of." Although seemingly amused by the laconic opinion of his old friend, he was disappointed, and expressed his wish that the operation should be performed, as the contracted state of his hand and fingers seriously interfered with his professional duties. He then arranged with the late Surgeon Tufnell to meet me in consultation, whose opinion having coincided with that already given by me, I performed the operation on the following day, assisted by Surgeon Tufnell. I divided subcutaneously the contracted portion of the fascia, and then placed a small pledget of lint over the puncture made in the skin, and then passed a narrow bandage round the finger, so as to make gentle pressure over the part. Three days after the operation I removed the dressings, and finding that the puncture was healed, I commenced the process of extending the fingers by means of the instrument (Fig. 11) until the contractions were completely removed. But as this instrument could only be worn for two or three hours, immediately on its removal I secured the hand upon a wooden splint (*vide* Fig. 5), by means of which the hand and fingers were kept not alone fully extended, but also inclining backwards.

This splint was worn for some weeks, and occasionally removed when requisite.

The doctor being possessed of great energy, he resumed a portion of his practice five or six days after the operation, and when driving in his carriage he adopted the novel mode of extending the parts by placing his hand upon a book and then sitting upon it.

The result of the treatment of this case was most satisfactory; all contraction was removed, and the use of the hand perfectly restored. I was afterwards constantly in the habit of meeting Dr. B., and he frequently expressed his satisfaction respecting the benefit and comfort which he had derived from operation and subsequent treatment, and also said that he had gained the perfect use of his hand. He was actively engaged in his professional duties for several years after I attended him, and never had any return of the contraction.

Case III.—Mr. B. consulted me for contraction of the little finger of his left hand; I divided the contracted portion of the fascia. Three days after the operation he got an attack of gout in the affected hand, which I thought would have delayed the curative treatment. However, I persevered in effecting a moderate amount of extension daily until the finger had regained its natural shape. The gouty attack having soon passed off, I gave him the splint (Fig. 5) which he had been wearing, with directions to use it at night, and as much as possible during the day, so as to prevent any return of the contraction. In a few days my patient was able to resume his official duties.

Having recently met this gentleman, he informed me that the finger upon which I operated had become slightly flexed, but not to the same extent as formerly, but that no contraction had taken place, either in the palm of the hand or in the three first fingers. That he had very good use of the hand for ten years after the operation, but unfortunately his right hand and fingers had become so much contracted that on some particular occasions he required the aid of the left hand, which had become more useful to him than the right.

In this case, although some slight recurrence of the contraction had taken place in the little finger, I wish to observe that the adjoining fingers and palm of the hand have still retained their normal condition. In many similar cases which I have treated the operations and subsequent treatment were not followed by any return of the contraction. Judging, therefore, from the permanent

benefit which I have seen derived by persons suffering from this affection, although gout may be latent in the system, I think we should have no hesitation in dividing the contracted portions of the fascia, as the operation forms one of the primary and most essential parts of the treatment.

In persons who have long suffered from this affection, the hand and fingers become rigidly contracted; the skin also thickened and indurated to such an extent as to prevent the possibility of tracing with accuracy the outlines of the contracted portions of the fascia. In such cases I prefer having the hand fixed upon the instrument (*vide* Fig. 11), as by this means more uniform and steady extension of the parts can be maintained during the operation than when held by an assistant. The cutting edge of the bistoury should be of sufficient length to extend across the entire contracted portion of the fascia. Then by a sawing movement of the hand of the operator the fascia will gradually yield until all the fibres have been divided, which will be announced by the sudden relaxation which takes place in the palm of the hand and fingers.

The incision usually requires to be made opposite the metacarpo-phalangeal articulation. The contracted and thickened condition of the structures at this part, and also the lower transverse branch of the palmar artery, lying in close proximity to it, a limited space only is afforded for performing the operation.

The mode of procedure which I have described contributes considerably to the safety and simplicity of the operation.

Congenital malformations of the hand present various appearances. Those which come more frequently under our observation arise from abnormal growths of the interdigital web, the extent and density of which are variable. It is sometimes thick and unyielding, or may be formed of hypertrophied skin, which occasionally extends downwards to the extremities of the ungual phalanges, thereby preventing to a greater or less extent the power of divaricating the fingers. In cases of this kind we occasionally see the toes of the same person similarly webbed either in one or both feet; but the web is usually more expansile in the feet than in the hands, which is mainly attributable to the person from childhood having been able to walk about. The superincumbent weight of the body would have the effect of producing expansion of the web, and consequent improvement of the motor power of the feet; but this malformation neither being attended with inconvenience, nor exposed to observation, renders the defect of less

importance when contrasted with the similar webbed condition of the hand.

There are some forms of congenital malformation of the hand, portions of which have been either entirely or in part undeveloped. In such cases persons frequently have recourse to artificial means, merely to mask the non-development of the parts. But the most ingeniously devised contrivances have practically been found to contribute little to the utility of the hand. Whereas in the case of some persons who, through accident, have lost portions of the hand and fingers, we are aware that well-made artificial substitutes to represent the lost parts may be used with great advantage.

Case IV.—Mr. F., aged twenty-six years, consulted me respecting congenital malformation of both his hands. He had only the thumb and little finger on each hand. The metacarpal bones of both hands were fully developed, and the breadth of each well proportioned. The amount of power which he possessed when using the finger and thumb of each hand was most remarkable. He could grasp his pen firmly and with great facility; he was also able to shave himself without any difficulty. Being desirous on particular occasions to screen his defects, carefully devised and well-fitting substitutes were procured, which he made use of for a time, but soon laid them aside, finding that they tended to diminish rather than improve his condition.

The growth of supernumerary fingers is another form of abnormal condition. The fingers are usually attached to the ulnar side of the fourth finger. Similar adventitious growths are sometimes developed, and are attached to the side of the thumb. But these useless appendages are generally imperfect in their formation, and being loosely attached, admit of being easily removed.

There are some forms of congenital malformation of the hand which render the treatment comparatively simple. But when the deformity becomes complicated by the non-development of portions of the osseous structure, the treatment may be rendered extremely difficult. Fig. 1, the drawing of which was taken from an accurate cast of the hand, conveys the appearance of a case of this description which I had under my care, the particulars and treatment of which are as follows:—

Case V.—Miss S. was four years old when I was consulted respecting the congenital malformation of her right hand, which upon examination presented but imperfect outlines of the hand, with the exception of the thumb and its ball, both of which parts were naturally developed. The

first or carpal row of phalanges was totally undeveloped. There was also an arrest of growth of all the other phalanges, especially those of the second and third fingers, the articular surfaces of which were uneven, and smaller than natural. The four fingers were firmly webbed to each other, the first and fourth being better developed than the second and third. The latter were much smaller, and without any development whatever of the knuckles.

It was obvious that the first part of the treatment of this case was to divide the interdigital web connecting the fingers. But as there were no definitive lines either on the dorsal or palmar aspects of the hand, to indicate the relative positions of the digital arteries and nerves, I deemed it necessary to divaricate the fingers as much as possible previous to performing the operation. I therefore placed small, rounded pieces of gutta-percha on the dorsal and palmar aspects of the web connecting the third and fourth fingers, over each piece of gutta-percha I placed thin pieces of wood, and afterwards compressed the parts firmly upon a splint with strips of adhesive plaster, which I gradually tightened for four or five days. A sufficient amount of divarication of the fingers having been effected, I transfixed the web at its upper part with a straight bistoury, and continued the incision downwards until entire separation of the fingers was effected. I then applied a strip of adhesive plaster, which was twisted in the centre so as to form a rough cord. This I placed high up between the fingers, the broad ends of the plaster being secured upon the palm and back of the hand. The cut surfaces were then dressed, and the fingers kept well apart from each other.

Three days after the operation I removed the dressings, and finding the parts in a satisfactory condition, I continued the dressings until the cut surfaces were healed, except the extreme upper portion, which I kept in a raw state by means of the twisted plaster, my object being to retard the progress of cicatrisation at this part, to prevent as much as possible the downward growth of the web, which is one of the difficulties with which we have to contend in the treatment of affections of this kind. When the cut surfaces were healed, the movements of the little finger were performed with freedom and ease.

Six weeks afterwards, the parts having been previously prepared as already described, I divided the web connecting the first and second fingers. The bistoury cut freely through the upper portion, but at the ungual extremity, the connecting medium being of an unyielding and tough nature, I was obliged to give a sawing movement to the bistoury to enable me to cut through it. Three days after the operation I removed the dressings, and finding that the case was progressing satisfactorily, I continued the dressings daily until the parts were healed. I then gave directions that the child should be allowed to use the hand as much as possible.

Two months afterwards, the parts having been previously prepared as on the former occasions, I divided the web connecting the second and third fingers, which were much smaller, and possessed of less motor power than the adjoining fingers. I dressed the cut surfaces daily, and when the parts were healed I allowed my young patient to make as much use of the hand as she pleased.

Having seen the child upon several occasions afterwards, I was enabled to judge of the improvement which had gradually taken place in the shape and in the use of the hand.

The precautionary measures which I adopted previous to each operation might *à priori* be deemed unnecessary. But, considering the age of the child and the close proximity of the digital arteries and nerves, the space was too limited to admit of the incisions being made without incurring risk. It was this difficulty which suggested to my mind the course which I adopted in this and, subsequently, in other similar cases, finding that it rendered the operation safe, simple, and almost bloodless.

The treatment of congenital malformations of the hand, especially those of an aggravated type, should be commenced at as early a period as the health of the child will admit of. For, when the parts become released from their state of contraction, greater space is afforded for the growth of the blood-vessels and nerves; consequently, a more perfect circulation will be established, on which must depend the future development of the various structures and usefulness of the hand.

I met Miss S. a few years since, being the first time I had seen her from the time my attendance upon her had ceased. She afforded me an opportunity of examining her hand, and I was much pleased to see the improvement which had taken place in the development, in the shape, freedom of motion, and also the ease and facility with which she was able to use the hand. Notwithstanding the shortening caused by the non-development of the first row of phalanges, the sensation and temperature of the hand and fingers were natural. Miss S. has now very good use of her hand. She can grasp objects firmly; she writes extremely well, and with much facility; she can also play the piano and strike the notes firmly. The only difficulty she feels is her inability to strike a chord.

Fig. 1, taken from an accurate cast of the hand, represents the original deformity.

Fig. 2 represents the hand after division of the web between the first and second and third and fourth fingers.

Fig. 1.

Fig. 2

Fig. 3

Fig. 4

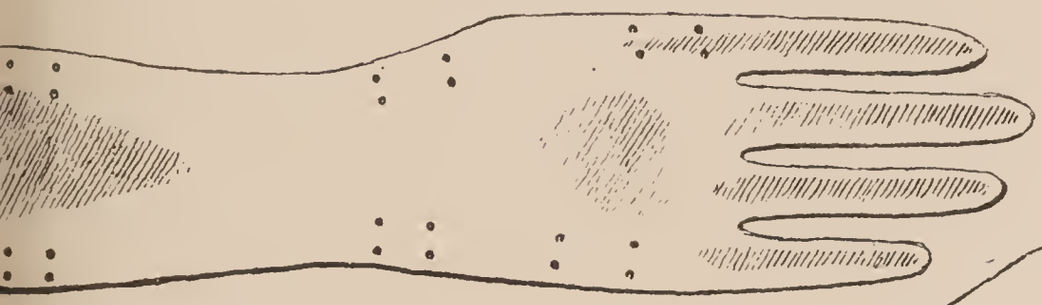


Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 3 represents the hand after division of the web between the second and third fingers.

Fig. 4 represents the hand after treatment.

The functions of the hand may be temporarily suspended, arising from irritation of certain portions of the cerebro-spinal system. In some cases the hand and fingers become suddenly flexed, producing what is technically termed hysterical closure of the hand. From this flexed position it is extremely difficult (even with considerable force) to produce extension of the fingers, as each attempt which we make tends rather to increase the muscular resistance, and if we do succeed when extension is discontinued the parts almost immediately return to their former state of flexion. The internal treatment which I have adopted in cases of this description is the administration of medicines of the anti-spasmodic and tonic character, such as are best suited for the age and constitution of the patient. Under this mode of treatment, combined with nutritious dietetic management, I have frequently found the spasmodic contraction of the hand to subside almost with the same rapidity as it occurred.

I was consulted by a lady who was then suffering from spasmodic closure of the hand, which had been suddenly produced by mental shock. Being a rare case of this kind I will give a detailed statement of the case.

Case VI.—Miss ——, aged twenty-eight years, a person of nervous temperament, apparently healthy and strong, yet of somewhat delicate constitution, consulted me some years since for spasmodic contraction of the left hand and fingers. She informed me that she had been suffering from this affection for nearly two years, prior to which time she enjoyed very good health. She attributed her ailment solely to mental shock produced by the sudden intimation of the death of a near relative, which was immediately followed by stiffness and pain in her neck, and by a sudden and rigidly-flexed state of the hand and fingers, in which clenched position the hand remained by day and by night without any interval of relaxation. Upon examination I ascertained that pressure upon the lower cervical vertebræ produced pain, with a morbidly sensitive state of the skin. The hand was rigidly closed, with the thumb lying across the palm, and firmly grasped by the fingers. I endeavoured gently to liberate the thumb by extending the fingers, but this trial I abandoned, finding that the attempt was followed by an increase of spasm and pain, which extended up the arm and shoulder, until it reached a point between the lower cervical and upper dorsal vertebræ, producing the sensation (which she described) as if a painful cord, extending from the hand along the

arm and reaching upwards to the nape of the neck, had become suddenly tightened. From the commencement of the attack this lady received all the care and attention which her medical attendant could bestow for the alleviation of her suffering, and, at the same time, adopted means for the purpose of extending the hand and fingers, all of which resisted his best efforts. She then made a tour through France and Germany for some weeks, and on her return her general health was much improved. But the hand having remained closed during the entire time, the ends of the fingers and nails became embedded in the palm of the hand, which was swollen and ulcerated from constant pressure.

It was at this period that I was first consulted respecting the case, and from the symptoms which I have now described it was evident that prompt measures should be adopted to release the hand from its contracted condition. Division of some of the tendons was suggested, but, as the future treatment of the case devolved upon me, I adopted the safe and more suitable method for removing the contraction by gradual extension of the parts. This I accomplished by means of the instrument (Fig. 11).

For the first few days the process of extension was attended with considerable pain, which extended from the hand up the arm to the nape of the neck; at this part the pain became so intensified that the instrument could only be worn for a shorter time, but, on its removal, I immediately applied a light wooden splint which admitted of the angle being increased as the parts became extended. By daily pursuing this course, the spasmodic condition of the muscles gradually subsided, the use of the hand and fingers became perfectly restored, and no recurrence of the contraction afterwards took place, and for every purpose she had perfect use of her hand.

When contractions of the hand and fingers arise, either from local injuries or other causes, many such cases require the intervention of operative surgery; whereas in spasmodic contractions arising from hysteria, mental shock, or cerebral irritation, surgical operations (except under certain circumstances) are contra-indicated.

Burns and scalds of the hand and fingers are frequently followed by contractions of the cicatrices, which are formed during and after the process of healing. The density and extent of the cicatrices depends mainly upon the intensity of the exciting cause, and the depth to which the structures may have been injured.

In scalds the parts are more superficially injured than in some cases of burns, yet the contractions arising from either cause are frequently difficult to counteract. We are aware that after the

parts have been healed the contractile tendency will persistently increase if not counteracted.

In cases of this description I use light wooden splints, of which we should have at least three or four. The first splint should be curved to suit the existing angle, the other splints should be formed at different angles, so that when required the fingers may be gradually extended and inclined somewhat backwards.

The back of the hand and fingers should be placed on the concave surface of the splint, which being deeply grooved, the parts may be easily retained *in situ* by attaching narrow strips of adhesive plaster, first to the splint and afterwards passing it over each of the contracted fingers. By adopting this course the parts may be dressed daily without interfering with the healing process. This mode of treatment I invariably pursue until the fingers are inclined sufficiently backwards.

To prevent any return of the contraction the splint should be worn at night, and during the day. It will be advisable to pursue this course until all tendency to contraction will have ceased.

In severe burns the palm of the hand may be injured to such a depth as to render the healing process tedious, and perhaps necessitating the hand and fingers being kept for a considerable time in the flexed position. Under such circumstances the cicatrices may be found deeply seated, and of dense and unyielding structure.

The operation for division of cicatrices in the palm of the hand is not unattended with difficulty, particularly if the contraction has existed for any considerable time. Under such circumstances the position of the artery becomes altered, being in some degree flexed and shortened. In such cases I have found it necessary to make a free transverse incision, corresponding to the most prominent part of the contraction, and then dividing the cicatrix transversely, until the contractions have been removed.

Case VII.—J. C. stated that when engaged at his work a sharp splinter of hard wood, about three inches in length, was suddenly driven into the inner part of the palm of his left hand; that a small portion of the splinter having projected beyond the wound, attempts were at once made to draw out the splinter, but it gave him so much pain that he refused having any further attempts made for its removal. The hand and fingers soon became inflamed, and when matter was formed the splinter was removed.

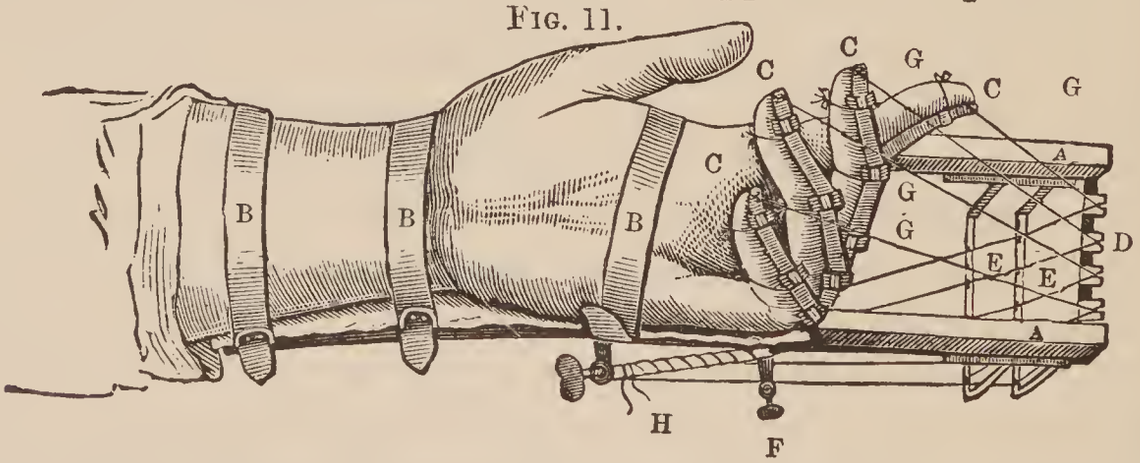
When first I saw this patient the inflammation had ceased, and the parts were entirely healed. The palm of the hand was tense, deeply

hollowed, and diminished in its transverse and longitudinal measurements; the tendon of the palmaris longus was prominent at the radio-carpal articulation; the thumb was flexed and drawn towards the palm of the hand; the four fingers were rigidly flexed, forming nearly right angles with the palm of the hand (Fig. 9). I was unable, without using considerable force, to produce either flexion or extension of the fingers and thumb, in consequence of adhesions having been formed between the tendons and their sheaths.

As no benefit could be derived by dividing the tendons, I used the instrument (Fig. 11), as the best means for making gradual extension of the fingers, at the same time breaking up the adhesions which had been formed between the tendons and their sheaths. By the alternate use of this instrument (Fig. 11) and the wooden splint (Fig. 5) the hand and fingers were restored to their natural shape (Fig. 10). The patient remained in hospital for three months, and when he left he was able to resume a portion of his accustomed work.

I constructed this instrument some years ago, and from the constant use of it, I have practically found it the safest and most efficacious means for making either flexion or extension of the hand and fingers. In its action it simulates the motions of the hand and fingers, to one or all of which it may be applied, as required.

Fig. 11.



A A—A wooden frame with cushion for arm and hand to rest upon. B B B—Straps to secure the limb on the instrument. C C C C—Small plates, jointed together, forming a succession of hinges corresponding to the phalangeal articulations, to which the fingers may be attached by pieces of tape. D—A bar with four grooves. E E—Two rounded bars, grooved. F—A cylinder moved by its handle. G G G G—Cords which are attached to the tops of the plates, which pass over the grooved bars, and through the apertures in the cylinder F, which, when rotated, will render tense one or more of the cords, as may be required, and producing the required amount of extension of the fingers. H—A screw, which may be turned on cylinder F, for regulating the required amount of traction or relaxation of the parts.

The length of time which this instrument should be worn must be regulated by the feelings of the patient. Immediately after its removal the wooden splint, Fig. 5, should be immediately applied.

Fig. 1. × 700

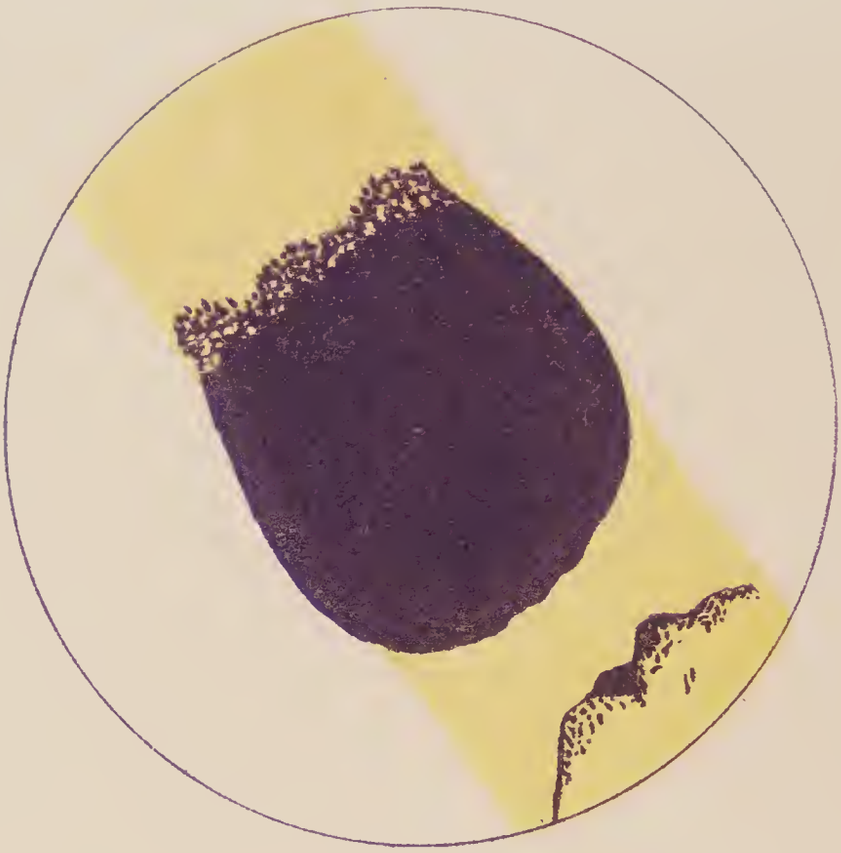
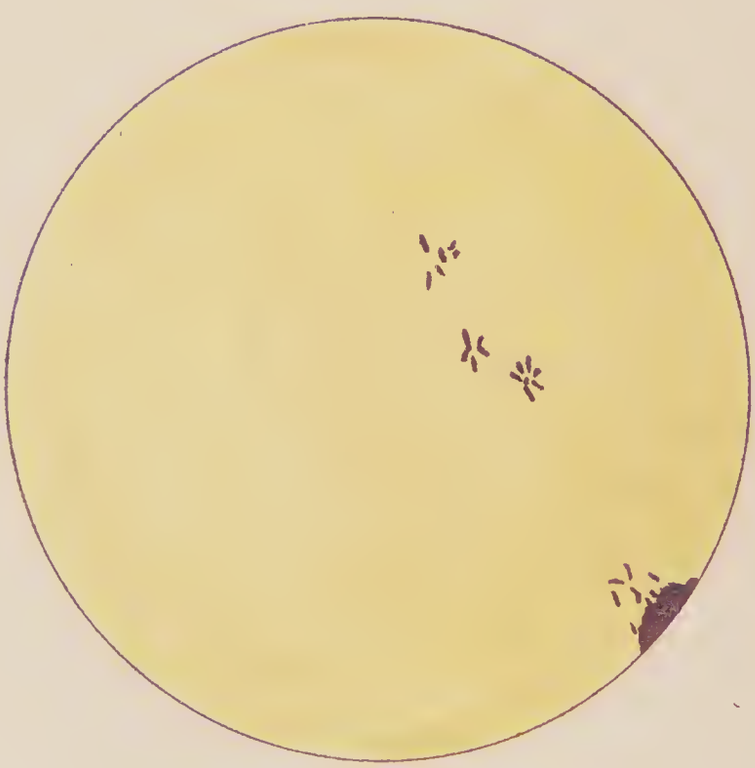


Fig. 2 × 1300.



Trichomycosis Nodosa.
[*Gram's Method.*]

ART. VIII.—*Trichomycosis Nodosa: a Note on its Characters and Relation to other Hair-Diseases.* By R. GLASGOW PATTESON, B.A., M.B.

SINCE the publication of the paper[a] which I read before the Section of Medicine of the Royal Academy of Medicine last session, I have had the opportunity, through the kindness of Dr. J. M. Finny, of examining five additional cases of axillary hairs affected with this disease. In all of them I found the distinguishing characteristics of the affection present—the hard, insoluble nodes, the splitting and rupture of the cortical fibres, the burrowed and worm-eaten surface, and the colonies of fine, rod-shaped bacteria. It is, therefore, possible to speak now with more certainty of the constant relationship of the bacilli to the disease; and when we consider the intimate nature of this relationship, the burrowing into and superficial destruction of the shaft which take place, I think we are justified in regarding it as more than a casual, as a causal one.

The drawings which I have made from two of Dr. Finny's cases show the same characteristics as those already published. Fig. 1 shows the deeply-stained homogeneous node, the bacilli only visible at its upper margin, where it blends with the surface of the shaft, many of them appearing in optical section, and resembling cocci. Immediately below is seen a spot where a group of bacilli is just effecting an entrance under one of the loosened cortical scales. This I believe to be the first step in the disease—the burrowing being followed by the formation of the node—and to be perfectly typical of it. It is a condition that has not been described by any author with whose writings I am acquainted. Fig. 2, drawn under a higher power, shows a few small groups of outlying, free bacilli, a little distance from the margin of a small node, and lying quite superficially on the hair-shaft. It is in such situations as this that the bacillary nature of the organism can be most clearly demonstrated. Owing to the length of time the hairs had been kept it was hopeless to undertake any cultivation experiments.

My attention has been called by Dr. W. G. Smith to an article published in the *Annales de Dermat. et de Syph.*, No. 12, 1888, of which an abstract appears in Unna's *Monatshefte für praktische Dermatologie* for June last. In it Dr. Ed. Juhel-Renoy describes an organism which he has found associated with the Columbian

[a] Brit. Med. Jour. May 25th, 1889. P. 1166.

hair-disease, long known to dermatologists under the name *pièdra*.[a] He has accordingly re-named the disease *trichomycosis nodularis*. The similarity of the name is unfortunate, and it may be therefore useful to point out the essential differences, both of the disease and of the organisms associated with it, which distinguish it from trichomycosis nodosa.

1. The nodes in pièdra consist of spores which are strongly refractive, double the size of the spores of tricophyton tonsurans, rounded, oval, or polyhedral in shape, and possessing a mycelium, as well as colonies of rod-shaped organisms of doubtful nature. The organism belongs therefore to the hyphomycetes, not to the schizomycetes, in which latter species the bacilli are included.

2. Pièdra affects the hairs of the head alone, the hairs becoming matted and twined together, forming an inseparable mass, whereas in trichomycosis the head is never affected, and only the hairs of the axilla and the scrotum are known to be liable to the disease.

3. "The fungus grows only on the surface of the hair, and causes no injury to the shaft" (Renoy). The essential feature in trichomycosis nodosa is the burrowing into and subsequent destruction of the cortical fibres of the hair-shaft.

4. Pièdra has never been known to occur spontaneously in this country, whereas the axillæ of many otherwise healthy persons will be found to be affected with the other disease.

It is perfectly evident from this that the diseases have nothing in common except a very close similarity of name, and it is unfortunate that in selecting a name I was unacquainted with this paper of M. Juhel-Renoy. However, I hope the distinctions I have pointed out above will prevent anyone from being misled by the resemblance, until a more suitable title has been suggested.

ART. IX.—*On Child Mortality and the Influence of Age Distribution as affecting the Death-rate in Dublin.* By Sir CHARLES A. CAMERON, President of the Public Health Medical Society; Professor of Hygiene and Chemistry, R.C.S.I.; Chief Medical Officer of Health for Dublin, &c.

THE interesting paper on the Mortality of Children by the Registrar-General of Ireland, which appeared in the number of this Journal for July,[b] should direct attention to a very important

[a] Vide Malcolm Morris, Trans. Pathol. Soc. Lond., 1879, for a full account of this disease, the first published in England.

[b] Vol. LXXXVIII. No. 211. Third Series. Page 1.

subject—the viability of children, especially those of the poor. The following notes on infant mortality were in print before I had an opportunity of reading the Registrar-General's paper; but, although they go over to some extent the ground which he has travelled, I venture to publish them.

MORTALITY OF CHILDREN.

The high death-rate of towns is, to a large extent, due to an excessive mortality of the children of the poor. Measles and other diseases, which are rarely fatal in the households of the rich, are formidable diseases in the homes of the very poor. It is sad to reflect that in 1887 one out of every five children born in Dublin died before attaining the age of one year.

The mortality of young children is largely due to the want of warmth and sufficiency of proper food, to almost continuous exposure to foul air, and to the neglect of their parents or custodians to procure for them during illness proper medical and nursing assistance. The number of deaths of children uncertified in Dublin is simply appalling; it is almost as great as the number in London with its vastly larger population. Let us see how the mortality of children in Dublin compares with that in other towns, and in doing so it is satisfactory to find that in 1888 there has been a substantial decline in the death-rate amongst children under five years old :—

MORTALITY OF INFANTS UNDER ONE YEAR OF AGE DURING 1888.

	England and Wales	28 Largest English Towns	Dublin
To 1,000 of the estimated population under one year of age . . .	145	162	196
To 1,000 births registered in 1888 .	137	154	167
To 1,000 deaths registered in 1888 .	235	251	189

In London the deaths of children under one year to 1,000 births, during the period 1871–1888, varied from 146 in 1883, 1887, and 1888, to 171 in 1871.

It will be seen that the infantile death-rate is much greater in Dublin, as regards its relation both to the number of children under one year of age and to the number of births—the latter being the most reliable test of infant mortality in a community.

In many English towns there is, however, even a higher mortality amongst children. For example—during the years 1876–1886 the death-rate of children under one year to 1,000 births in Preston was 218; in 1887, 214; and in 1888, 180.

As regards the relation between the deaths of infants to those of persons of all ages, it will be seen that the proportion is much lower in Dublin than in English towns, or in the whole of England. One cause of this difference is the smaller percentage of infants under one year of age in Dublin, as compared with the English towns. This will not, however, fully account for the difference, which is also in part due to the relatively higher mortality of the population aged one year and upwards. That is, whilst there is a relatively greater mortality in the whole population of Dublin as compared with the English towns, the difference is not so great in the case of infants under one year of age between Dublin and the English towns. If, however, London be excluded, the infantile death-rate will be found not to differ much from that in the other English towns.

With regard to the deaths of children under five years of age, the death-rate per 1,000 of the population under five years old was 92·3 on the average during the period 1878–1887. In 1888 the rate fell to 74·6 per 1,000.

In 1888, 2,843 of the 8,894 deaths registered in Dublin registration district were those of children under five years. 30·2 per cent. of the deaths which occurred in the period 1878–87 were those of children under five years of age. In 1888 the deaths of children under five years old were 32 per cent. of the total deaths. If we compare these rates with those of some other towns the comparison will be favourable to Dublin.

In Birmingham, during the period 1878–1887, the deaths of children under five years constituted 47·1 per cent. of the total deaths. In Nottingham the percentage during the period 1878–1887 was 44, and in 1888 (48 weeks) 40. In Manchester the percentage varied from 39·2 in 1881 to 43·6 in 1887. In Newcastle-upon-Tyne the percentage in 1887 was 43·3. In Sheffield it was 46·05 in 1886, and 45·88 in 1887. In Liverpool the percentage was as follows:—1885, 45·1; 1886, 44·2. In Leeds the proportion of deaths of children under five years was 2,684, as against 6,922 of all other ages during the year ending 31st August, 1888. The following statistics apply to Bradford:—

Year	Total Deaths	Deaths of Children under five years
1878 - - - -	4,144	1,963
1879 - - - -	4,106	1,742
1880 - - - -	4,107	1,970
1881 - - - -	3,612	1,469
1882 - - - -	4,142	1,902
1883 - - - -	3,741	1,376
1884 - - - -	4,285	1,766
1885 - - - -	3,791	1,429
1886 - - - -	4,187	1,836
1887 - - - -	4,458	1,853
1888 (three-quarters of)	2,899	1,099

CORRECTED DEATH-RATE FOR DUBLIN.

The relative salubrity of two towns cannot always be ascertained from the mere death-rate of each. Thus, a town with a death-rate of 20 per 1,000 persons living might be really a more healthful place than a town with a death-rate of 19 per 1,000. The significance of the mere number of deaths in a town is affected by various conditions, such as immigration, emigration, relative proportions of the sexes, birth-rate, &c. As the average duration of life amongst women is greater than amongst men we must expect to find a lower death-rate in a place in which women largely preponderate than in an equally salubrious place in which they are a minority. Again, as there are fewer deaths amongst persons aged from 15 to 40 than in persons under or above those ages, it is clear that the larger the proportion of the most viable persons in a community, the lower the death-rate will be.

The really serious factor affecting death-rates is age distribution. If it is identical in two towns, then the death-rate in both should be equal; and if not equal, then that in which it is higher is clearly the more unhealthy.

In England and Wales, the deaths at various ages of the population being ascertained, it is found that the distribution of age differs in the case of the towns from that of the country at large. In some towns, notably Brighton, the difference is trifling, but in others—for instance, Preston and Manchester—it is considerable. In the latter towns a large proportion of the population are of those ages in which in the whole country the mean expectation of life is greater than is the case with Brighton, Derby, Norwich, &c.

I have considered the question—What effect has age distribution in Dublin in relation to the deaths? I had, *à priori*, formed an opinion that in Dublin the arrangement of the population into

different age-groups would show a condition of things similar to that at Brighton—on the contrary, I found that it approximated rather to that in Manchester. In fact, the distribution of age and sex in Dublin is favourable to a low rate of mortality, and in this respect is exceeded only by two English towns—namely, Oldham and Manchester. In Ireland, however, I find that Belfast is even more favourably circumstanced in this respect, whilst Cork is slightly less so. It will, however, be sufficient to compare Dublin and Belfast with England and Wales. In 1881 the age distribution in those places was as follows :—

	England and Wales	Dublin	Belfast
All Ages - -	1,000·00	1,000·00	1,000·00
Under 5 - -	135·55	108·61	123·05
5 to 20 - -	327·05	289·43	326·03
20 to 40 - -	295·02	345·78	332·28
40 to 60 - -	158·60	183·63	166·43
60 and upwards -	73·78	72·55	52·21

In Dublin the proportion of the population in the groups of ages having the greatest longevity is excessive as compared with England and Wales, and is deficient as compared with Belfast. If, therefore, Dublin and Belfast have the same death-rates, the former must be in a better sanitary condition, as the population of Belfast includes a larger proportion of persons whose duration of life is greatest.

I have corrected the death-rates of Dublin, Belfast, and Cork in 1888, by factors founded on the distribution of age and sex, and with the following results :—

	Recorded Death-rate	Corrected Death-rate	Difference
Dublin - -	24·5	27·1	2·8
Belfast - -	25·3	29·0	3·7
Cork - -	24·1	26·3	2·1

In Manchester, in 1888, the recorded death-rate was 26·09, but corrected for age and sex distribution it was 29·07.

ART. X.—*Researches in the Chemistry of Selenic Acid and other Selenium Compounds.* By SIR CHARLES A. CAMERON, M.D., F.R.C.S.I., V.P.I.C.; Professor of Chemistry and Hygiene, R.C.S.I.; and JOHN MACALLAN, F.I.C.; Demonstrator of Chemistry, R.C.S.I.

(*Continued from p. 123.*)

THE SPECIFIC GRAVITIES OF THE HIGHER STRENGTHS OF SELENIC ACID.

THE specific gravities of selenic acid for the higher strengths, taken in the liquid state at 15° C., are given in the following table. The most concentrated acid, of 99·73[a] per cent. strength, has been referred to when describing the preparation of the anhydrous acid; its specific gravity, 2·6083, was taken while in the superfused condition. The next acids down to 94·74 per cent. were obtained by diluting that of 99·73 per cent. The acid having a strength of 93·70 per cent. was obtained by heating dilute acid in a vacuum at 100° C., and it supplied the following strengths, down to 82·52 per cent. by progressive dilution. That of 81·73 per cent. was prepared by concentration on the water-bath, and the remaining four by dilution of the latter. Neither the acid heated in a vacuum, nor that which was kept on the water-bath, contained any trace of selenious acid.

TABLE I.

Percentage of Anhydrous Selenic Acid	Specific Gravity
99·73	2·6083
99·08	2·5993
98·68	2·5901
98·16	2·5790
97·37	2·5676
96·97	2·5595
96·16	2·5424
94·74	2·5105
93·70	2·4852
92·83	2·4534
91·59	2·4218

[a] 99·73 per cent. of selenic acid, acid sodium selenate, equivalent to 0·07 per cent of neutral sodium selenate, and 0·20 per cent. of water (Se being = 78·87).

Percentage of Anhydrous Selenic Acid	Specific Gravity
90·06	2·3863
89·20	2·3642
88·55	2·3402
87·34	2·3158
86·60	2·2946
85·67	2·2712
84·59	2·2465
83·82	2·2196
82·52	2·1878
81·73	2·1694
80·86	2·1438
79·99	2·1213
79·06	2·0940
73·43	1·9659

Table II. is calculated from Table I., and gives specific gravities interpolated for equal increments of strength. It will perhaps be found most convenient for purposes of calculation, and for showing the relation of the rate of increase of specific gravity to that of the strength.

TABLE II.

Percentage of Anhydrous Selenic Acid	Specific Gravity
99·73	2·6083
99·50	2·6051
99·00	2·5975
98·50	2·5863
98·00	2·5767
97·50	2·5695
97·00	2·5601
96·00	2·5388
95·00	2·5163
94·00	2·4925
93·00	2·4596
92·00	2·4322
91·00	2·4081
90·00	2·3848
89·00	2·3568
88·00	2·3291
87·00	2·3061

Percentage of Anhydrous Selenic Acid	Specific Gravity
86·00	2·2795
85·00	2·2558
84·00	2·2258
83·00	2·1946
82·00	2·1757
81·00	2·1479
80·00	2·1216
79·00	2·0922
73·50	1·9675

The rate of increase of specific gravity is not uniform for equal increments of strength. It diminishes as the strength increases, as in the case of sulphuric acid, but not regularly. The diminution is very marked at the highest strengths. When sulphuric acid has arrived at the greatest strength attainable by ebullition—98·66 per cent., its specific gravity is stated to decrease until the anhydrous acid, H_2SO_4, is reached. Selenic acid behaves dissimilarly in this respect; the increase of its specific gravity, although not uniform, is maintained throughout.

Berzelius (*Traité de Chimie*, 1830) mentions that selenic acid of 95·9 per cent. strength has a specific gravity of 2·6. Fabian gives 2·609 as the specific gravity of an acid of 94·9 per cent. strength, and 2·627 for an acid of 97·4 per cent. It will be seen that these results do not agree, nor are they consistent with those we have obtained. If values for the strengths mentioned be calculated from the foregoing tables, an acid of 95·9 per cent. will be found to have a specific gravity of 2·5366, while the specific gravities of 94·9 per cent. and 97·4 per cent. acids will be respectively 2·5141 and 2·5680, being less than those assigned above. Furthermore, the difference between the two specific gravities given by Fabian is much less than we find between two acids differing by 2·5 per cent. The most probable explanation of the discrepancy is that the acids which gave the above results contained sufficient selenium dioxide to raise their specific gravities appreciably. It may be shown that the effect of the development of selenium dioxide in selenic acid is to increase the specific gravity relatively to the acidity. In the acids above mentioned, selenium dioxide would exist as such, and not as selenious acid, owing to dissociation of the latter at a temperature below those at which the acids were formed, and the weak affinity for water possessed by the resulting

dioxide. Clausnizer (Liebig's *Annalen der Chemie*, 196, 265) gives the specific gravity of selenium dioxide at 15·3° C. as 3·9538. We have also recently taken its specific gravity, and are in a position to confirm his result. It is thus more than one and a half times as dense as the strongest selenic acid. C. Blarez (*Comptes Rendus*, 103, 804–806) has examined the saturating power of selenious acid. He finds that it is monobasic with cochineal or methyl-orange. With litmus, it is monobasic to ammonia, lime, strontia, and baryta, but with soda or potash the litmus only becomes blue-violet when about 1·5 equivalents of alkali are added. We have obtained a like result with soda or potash and litmus. When one equivalent of the acid is saturated, there is a distinct change in the colour of the litmus, so that in the absence of other acids it might be used as an indicator for selenious acid. Taking 1·5 equivalent of alkali as the limit, the molecule of selenium dioxide in solution will have a less saturating power than that of selenic acid in the ratio of 2 : 1·5. This will be partly counterbalanced by the higher molecular weight of the latter, but the final effect of the substitution of selenium dioxide for selenic acid will be to reduce the acidity. A gravimetric method by which selenium dioxide would be oxidised and estimated as selenic acid, would also show a less acidity compared with the specific gravity than if the pure acid were used, but not to the same extent as when a volumetric process is employed for estimating the strength.

The Action of Heat upon Selenic Acid.

Action of Heat in a Vacuum.—The effect of heating dilute selenic acid in a vacuum up to 180° has already been described—dilute acid distils until that temperature is reached, when the anhydrous acid remains.

The result of further heating is merely for a time to raise the temperature; the acid does not distil in the anhydrous condition. At about 200° it begins to decompose slowly, and at higher temperatures rapidly, into selenium dioxide, oxygen, and water. The last serves to dilute a portion of the remaining acid, which then at once distils. In order to examine the effect of distilling the anhydrous acid destructively in a vacuum, a portion was heated in a flask connected with a condensing arrangement until rapid decomposition took place. The residue always consisted of a mixture of anhydrous selenic acid with selenium dioxide, the proportion of the latter increasing with the rise of temperature and

length of time of heating. The former was proved to be present by dropping in a crystal of anhydrous acid, when the liquid froze, and it also gave a coloration in the cold with the selenium test for the same acid which will be described hereafter. A portion which had been distilled for some time left a residue of which 0·7107 gram neutralised 18·50 c. c. of seminormal soda solution, using litmus as indicator, equivalent to 94·27 per cent. of acid calculated as selenic—a result which might be expected, owing to the influence of the selenium dioxide in diminishing the acidity, as has been already pointed out. The distillate consisted of selenium dioxide mixed with selenic acid. The latter was in a dilute state, since it would not solidify on addition of a crystal of anhydrous acid, nor would it respond to the selenium test: 0·4703 gram neutralised 11·11 c. c. of seminormal soda solution, equivalent to 85·46 per cent. of acid calculated as selenic. Taking into account the diminution of acidity caused by the selenium dioxide, it is evident that a very concentrated, although not anhydrous, acid distils over.

Action of Heat under ordinary pressures.—When dilute selenic acid is boiled at ordinary pressures nothing but water is evolved until 205° C. is reached, at which temperature it has the composition of the monohydrated acid. In these respects it behaves like dilute sulphuric acid. After passing 205° C. the distillate contains at first mere traces of selenic acid, but its strength gradually increases. A portion of acid distilled between 205° C. and 227° C. yielded a distillate of which 0·6826 gram neutralised 0·10 c. c. of seminormal soda solution, equivalent to 0·53 per cent. of selenic acid. On further heating from 227° C. to 260° C. a distillate was obtained, of which 0·3818 gram neutralised 0·32 c. c. of seminormal soda solution, equivalent to 3·03 per cent. of selenic acid. At the latter temperature the acid commenced to distil over in white fumes. 0·6878 gram of the residue left at 260° C. neutralised 17·76 c. c. of seminormal soda solution, equivalent to 93·41 per cent. of selenic acid. At higher temperatures a portion of the acid is decomposed, the distillate being kept weak by the water continuously set free in the decomposition; and at still higher temperatures much selenium dioxide also distils over. A portion of acid which commenced to boil at 235° C. was heated until the temperature rose to 325° C : 2·1542 grams of the distillate neutralised 3 c. c. of seminormal soda solution, equivalent to 5·04 per cent. of selenic acid. The residue was then further heated until the greater

part of the acid was decomposed, and the strength of the distillate taken: 1·6176 gram neutralised 16·5 c. c. of semi-normal soda solution, equivalent to 36·90 per cent. of acid calculated as selenic, but much of the acidity was due to selenious acid, a large amount of which was present in the distillate. It is thus seen that the acid which distils under ordinary pressures is always highly dilute.

When anhydrous selenic acid is strongly heated under ordinary pressures a portion of it is decomposed into selenium dioxide, oxygen, and water, the latter serving to dilute the remaining acid. It will then no longer solidify on addition of a crystal of the anhydrous acid. After further heating it becomes sufficiently dilute to distil over in the manner already described. It is instructive to compare with this the action which takes place in the case of anhydrous sulphuric acid. Marignac found (*Annales de Chimie et Physique*, (3), 39, 184), that the latter when heated gives off sulphuric anhydride until the remaining acid is reduced to the same strength as that yielded by a more dilute acid on prolonged ebullition—about 98·66 per cent. In the case of selenic acid the anhydride is evidently unable to exist free at elevated temperatures, but breaks up into selenium dioxide and oxygen.

It is worthy of note that a remarkable coincidence exists between the temperature at which selenic acid is decomposed and that at which selenium dioxide sublimes. The latter is not stated very definitely in any of the chemical text-books; we have found, however, that at 280° C. rapid sublimation takes place, while at 250° C. volatilisation proceeds slowly. When selenic acid is kept for some time at the latter temperature it is always found to contain traces of selenium dioxide, while at 280° C. decomposition proceeds with rapidity. It is probable that a connection exists to a considerable extent between the phenomena, and that the explanation of the coincidence may be that the comparatively weak affinities which bind the molecule of selenic acid are unable to prevent its disruption when once a temperature is reached at which the tendency of its constituents to separate is aided by the expansion attending a change to the gaseous condition. We have seen that both phenomena are affected by the temperature; they are also dependent to some extent upon the pressure. Anhydrous selenic acid commences to dissociate in a vacuum at about 200° C. We found that when selenious acid was heated under similar circumstances water was quickly evolved, and after prolonged

heating of the residue a distinct white ring of selenium dioxide was deposited on the cold portion of the neck of the flask.

The Action of Sulphur upon Selenic Acid.

When powdered sulphur is mixed with liquid anhydrous selenic acid, there is no action in the cold; but if the mixture is heated to 63° C., the sulphur dissolves in the acid with production of an exceedingly deep indigo-blue colour. There is some action, but slight, at 58° C. The body which is produced is very unstable, since it begins to decompose at the temperature at which it is formed, with evolution of sulphur dioxide, and reduction of the selenic acid to selenious acid. If water is added when the colour has first developed, sulphur is deposited in soft yellow flakes; but after decomposition has commenced, the addition of water throws down red selenium chiefly, owing to the reaction between the sulphurous and selenious acids which are formed.

A similar action has long been known to occur between sulphur and sulphuric acid. In 1804 Buchholz (Gehlen's *Neues Journal der Chemie*, 3, 7), discovered that sulphur dissolved in the latter acid with the formation of a blue colour, the sulphur being re-precipitated on addition of water. This reaction was subsequently investigated by Vogel, Schweigger, Berzelius, Wach, and Stein, and in 1875 Weber succeeded in isolating the blue compound (Poggendorff's *Annalen der Physik und Chemie*, 156, 531), and discovered it to be a sesquioxide of sulphur, S_2O_3, but very unstable, decomposing at ordinary temperatures with evolution of sulphur dioxide.

The Action of Selenium upon Selenic Acid.

A reaction takes place between selenium and anhydrous selenic acid in the cold. The selenium dissolves in the acid with production of an intense and beautiful green colour. The presence of a minute quantity of water prevents the colour from developing fully until the acid is warmed. The acid is capable of dissolving a considerable quantity of selenium. If kept in a closed vessel the colour thus produced is very permanent, being unaffected for months during summer weather, but if the acid be heated to 75° C. the colour disappears, and the selenic acid is found to be partly reduced to selenious acid. Addition of water, when the colour has developed, throws down a voluminous red precipitate of selenium; and exposure to the air in an open vessel for a few

minutes is sufficient, from the same cause, to change the green colour to red. It will be shown hereafter that this green colour is probably caused by the formation of a new oxide of selenium. Its production with the anhydrous acid affords a test for the latter, which we have already made use of in examining the effect of heat upon selenic acid.

In 1827 Magnus found that selenium was dissolved by strong sulphuric acid, with development of a green colour, and was reprecipitated on addition of water. Berzelius and Fischer subsequently investigated the reaction, and in 1875 Weber (Poggendorff's *Annalen der Physik und Chemie*, 156, 545), isolated the green compound, and found it to be a sulphoxide of selenium, $SeSO_3$. The colour given by selenium with sulphuric acid is a dark green, not so bright as that which it produces with selenic acid.

The Action of Tellurium upon Selenic Acid.

Like selenium, tellurium reacts upon anhydrous selenic acid in the cold, but with production of a purple red colour. Even when the acid is not perfectly anhydrous, it will still give a coloration in the cold. The compound thus formed is probably very unstable, since the colour disappears at so low a temperature as 19° C., the selenic acid being partly reduced to selenious acid. If water is added when the colour has developed, tellurium is thrown down in sooty flakes, and exposure to moist air produces the same effect.

Tellurium reacts in a similar manner with strong sulphuric acid, with development of a red colour, and reprecipitation on addition of water. This was first observed by Müller von Reichenstein. In 1798 the same reaction was investigated by Klaproth, and afterwards by Magnus and Fischer. The red compound was isolated by Weber in 1882 (*Journal für praktische Chemie*, 25, 218), and soon afterwards independently by Divers and Shimosé (*Journal of the Chemical Society*, Transactions, 43, 319), and was ascertained to be tellurium sulphoxide, $TeSO_3$.

Comparison of Sulphoxides with Selenoxides.

The coloured compounds first formed by the action of sulphur, selenium, and tellurium upon sulphuric acid were subsequently produced by the action of the same bodies upon sulphuric anhydride, and were isolated by forming them in the latter manner, and then removing the excess of anhydride. As has been already mentioned, they were found to be sulphoxides having the composition respec-

tively, SSO_3, $SeSO_3$, and $TeSO_3$. Considering the similarity of the reactions which produce them, and of the decompositions to which they are liable, it is very probable that the coloured bodies formed with selenic acid are selenoxides, analogous to the sulphoxides already known, the sulphur in the latter being replaced by selenium. A comparison of the formulæ of the two series of bodies as represented in the following table, leads to some interesting considerations:—

Colour of Compound	Sulphoxides	Selenoxides
Blue	SSO_3	$SSeO_3$
Green	$SeSO_3$	$SeSeO_3$
Red	$TeSO_3$	$TeSeO_3$

The green body formed by the action of selenium upon selenic acid is, in all probability, a new oxide of selenium, having the composition Se_2O_3, analogous to the sesquioxide of sulphur formed by the action of sulphur upon sulphuric acid.

The colour of the above compounds appears to be almost entirely due to the element which is added on to the anhydride; the sulphur or selenium in the residual portion of the molecule has scarcely any effect upon the colour.

The green body $SeSO_3$ must be isomeric with the blue compound $SSeO_3$, and consequently the atoms of sulphur and selenium in each of these bodies must occupy dissimilar positions in the molecule.

The Possible Existence of Selenic Anhydride.

A consideration of the forgoing facts leads to the conclusion that selenic anhydride, which has not up to the present time been obtained, is yet capable of existing in a free condition. Just as the sulphoxides are direct addition compounds of sulphur, selenium, and tellurium respectively, with sulphuric anhydride, so the selenoxides must be regarded as addition compounds of the elements mentioned, with selenic anhydride. It is difficult to conceive that bodies so constituted are capable of existing free, and that the anhydride is unable to do so. On the other hand, it is probable that it dissociates at a comparatively low temperature, but one that is higher than 75° C.—the highest temperature at which the most stable of the selenoxides has been as yet found to exist. Selenious anhydride is always obtained, and not selenic, under similar conditions to those which produce sulphuric anhydride, and involving a high temperature.

We have examined the action of heat upon various selenates. Those selected for the purpose were the selenates of antimony, bismuth, platinum, lead, and silver, and also ferric and mercuric selenates. In no instance was selenic anhydride obtained, but selenious anhydride was evolved in all cases when the above selenates were strongly heated.

V. Gerichten (*Liebig's Annalen der Chemie* for 1873, p. 214) endeavoured to form selenic anhydride in a similar manner to that by which sulphuric anhydride is usually obtained—by leading a mixture of oxygen and the vapour of selenious anhydride through red-hot platinum sponge. He states that in one experiment a white deposit was obtained which consisted partly of selenious anhydride, but probably also contained selenic anhydride, since it dissolved in water with a hissing sound, and the solution was found to contain selenic acid. In subsequent experiments a decidedly negative result was obtained, since only selenious anhydride was found in the product.

In order to examine if selenic anhydride is produced in the manner just described, the following experiments were made:—

Some platinum sponge was introduced into a combustion tube, and a quantity of selenious anhydride placed behind it. The platinum sponge was kept at a red heat, and the selenious anhydride was also heated until it sublimed. Oxygen, which was first dried by passing through a series of tubes containing calcium chloride and sulphuric acid, was led through the platinum sponge, carrying the vapour of the selenious anhydride with it. A white deposit formed in front of the platinum sponge, which, on examination, was found to consist solely of selenious anhydride. The experiment was repeated, substituting selenium for selenious anhydride. The vapour of the selenium, on passing through the platinum sponge, was oxidised to selenious anhydride, but no selenic anhydride was formed.

The next experiment was similar to the first, but platinum black was substituted for platinum sponge. As before only selenious anhydride was deposited.

In the next experiment selenious anhydride was mixed with platinum sponge, and placed within a tube arranged in such a way that it could be placed in an oil-bath. The temperature was then raised gradually to 250° C., oxygen being led through continuously. At the temperature mentioned a sublimate formed, and this, as well as the platinum sponge, was treated with water and tested, but no selenic acid was found.

The next experiment was similar to the last, except that the selenious anhydride was mixed with platinum black instead of platinum sponge, but, as before, nothing but selenious anhydride was obtained.

As may be seen from the above experiments, we have been unable to confirm the observation made by V. Gerichten.

We have found that oxygen in the active condition is unable to oxidise selenious anhydride. Oxygen, which was first passed through a series of drying tubes, was ozonised by means of a Houzeau's ozoniser, and then led slowly through a tube containing selenious anhydride for three hours and a half. At the end of that time the tube was disconnected, the ozone displaced by a current of dried air, and the contents of the tube dissolved in water and tested for selenic acid, but no trace of it was detected.

The Selenates of Antimony, Bismuth, and Platinum.

In the examination of the action of heat upon selenates, the three above mentioned were included. We have been unable to find any published account of these, and accordingly give here a short description of them.

Antimonious selenate.—This body was formed by heating metallic antimony with selenic acid until it dissolved, and then continuing the heating until the excess of acid was driven off. It forms a white crystalline mass, which under the microscope is seen to consist of minute prisms. It is not very soluble in acids, but on boiling with selenic acid for some time it dissolves slightly, but apparently without formation of an acid salt, as the crystals deposited on evaporating the solution have the same shape and size as the original salt. It is not decomposed on boiling with water, nor is it soluble; if, however, the excess of selenic acid has not been expelled in its preparation, a little of it dissolves in the weak acid formed, and crystallises out again on cooling.

Bismuthous selenate.—This was prepared by boiling bismuthous carbonate with selenic acid, and continuing the heating until the excess of acid was expelled. It crystallises in minute white prisms. It is insoluble in water, and is not decomposed by it on boiling, but if selenic acid is present it dissolves. It is also soluble in sulphuric acid on boiling, and readily in hydrochloric and nitric acid. Potash and soda decompose it, uniting with the selenic acid.

Platinic selenate.—This was prepared by heating platinic chloride with selenic acid until the hydrochloric and excess of selenic acid

were expelled. It is a dark-brown body, which dissolves slightly in water on boiling, forming a yellowish-brown solution. It is insoluble in alcohol. It dissolves readily in hydrochloric acid, and leaves metallic platinum on ignition.

The Action of Phosphoric Anhydride upon Selenic Acid.

When sulphuric acid is heated strongly with phosphoric anhydride, sulphuric anhydride is evolved; on the other hand, the effect of heating a mixture of anhydrous selenic acid and phosphoric anhydride to a high temperature is, that selenious anhydride is given off, and not selenic. In order to see if a different reaction occurs between the latter two bodies at a lower temperature, some anhydrous acid was mixed with phosphoric anhydride in a flask, which was then tightly closed and placed in the water-oven. After heating for some time a clear solution was obtained, and the flask was then removed and allowed to stand in the cold. Crystals were slowly deposited, which under the microscope were seen to be transparent cubes. The acid liquid was drained off, and the crystals examined. So far as an analysis could be carried out the result agrees with the view that the body thus obtained is selenic anhydride, SeO_3, but the quantity of material at our disposal at the time was too small to admit of its satisfactory separation and examination. We are, however, at present engaged in operating upon larger quantities, and hope, at no distant date, to submit our results to the Royal Society.

Selenium Oxychloride.

It may be useful here to mention a reaction, hitherto undescribed, by which selenium oxychloride can be obtained. It consists in distilling a mixture of sodium chloride and selenium dioxide. The reaction is a simple one—

$$2\ SeO_2 + 2\ NaCl = Na_2SeO_3 + SeO\ Cl_2.$$

Half the selenium remains as sodium selenite.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Medical and Surgical History of the War of the Rebellion. Part III. Volume I. Medical History. Being the Third Medical Volume. Prepared, under the Direction of the Surgeon-General, United States Army, by CHARLES SMART, Major and Surgeon, United States Army. Washington: Government Printing Office. 1888. Quarto. Pp. 989.

THE first part of this stupendous work was published in 1870, and consisted of a consolidation by departments and regions of the monthly reports of sick and wounded of the various regimental organisations, with appended extracts from special reports of medical officers, giving a view, from a medical standpoint, of the movements of the American armies and the many deadly struggles which took place between the opposed forces in the historic "War of the Rebellion" in the years 1861 to 1865.

The second part, published in 1879, from the pen of the late distinguished Surgeon J. J. Woodward, of the United States Army, was devoted to a thorough discussion of the alvine fluxes, based on the material, documentary and anatomical, collected by the medical officers during the war.

In July, 1883, the late Surgeon-General Crane expressed to Major and Surgeon Charles Smart his desire, which in this instance was intended to carry the weight of an order, that he should undertake the third part of the work. No conditions were imposed as to the matter or manner of the volume to be written, save that a series of valuable plates, which Dr. Woodward had prepared, illustrative of the pathological changes observed in the intestinal tunics of the victims of the war, should be embodied in the work. Dr. Smart brought his labours to a successful issue at the beginning of last year (January, 1888), and the result is the massive volume now before us.

In a necessarily brief notice of such a work, it would be impossible to go into details, but three of the twelve chapters which

make up the body of the work deserve a special notice at our hands. The first of these is Chapter IV., on the "Continued Fevers." This so-called "chapter" extends over 360 large quarto pages, and embraces sections on statistics, clinical records, symptomatology, *post-mortem* records, pathological anatomy and pathology, ætiology, and treatment. The section on pathological anatomy is profusely illustrated with a series of most beautiful photo-reliefs, heliotypes, photographs on steel, and chromo-lithographs. In these the pathological appearances of the intestines in typhoid fever are shown in perfection. We venture to say that such another collection of drawings does not exist, and we tender our heartiest congratulations to the various artists for the splendid way in which they have done their work.

Another short but interesting chapter is that (No. IX.) on certain diseases not heretofore discussed in the work. The headings in this chapter are—Nostalgia, Army Itch, Poisoning, Alcoholism, and Venereal Diseases. Of "poisoning," 3,288 cases were reported among the white troops, of which 97 were fatal. Some of these, including most of the fatal cases, resulted apparently from opium taken by mistake or with suicidal intent. But the mass of the cases consisted of a cutaneous inflammation of the head and face, sometimes of the upper extremities, and occasionally of the nates, scrotum, and adjoining parts of the trunk and thighs, which was referred to the agency of the poison oak, *Rhus toxicodendron.* This inflammation was attended with much pain, heat, and irritation, and the swelling sometimes—as in erysipelas—obliterated the features. The affected surface was of a lurid red colour, covered in aggravated cases with vesicles, the contents of which became encrusted on drying, or oozed as a thin liquid from superficial fissures. There was usually little constitutional disturbance, but often much suffering from local irritation and loss of sleep. Generally the inflammation subsided in about a week or ten days without leaving subcutaneous suppurations. It was treated by aperients, cooling lotions, anodynes, and hypnotics. It is worth remembering that the *Sumachs* of our British shrubberies are a species of *Rhus* (N. O. *Terebinthinaceæ*), the poisonous properties of which they possess in no small degree.

Under the term "Alcoholism" are included the statistics of inebriation, delirium tremens, and chronic alcoholism. Among the white troops there were reported during the five and one-sixth years the war lasted, 5,589 cases of "inebriation"—that is, we

presume, drunkenness—of which 110 terminated fatally; 3,744 cases of delirium tremens, with 450 deaths; and 920 cases of chronic alcoholism, with 45 deaths. These figures are equivalent to a rate of 4·6 cases annually per 1,000 of strength.

The plague of venereal diseases became so great that at Nashville and Memphis efforts were made to suppress or limit these diseases among the troops, and according to the testimony of the officers concerned the results were highly satisfactory. A system of licensed prostitution was organised, with frequent inspection for the removal to hospital of those likely to disseminate disease. Under the regulations adopted, we are told that "a marked improvement was speedily noticed in the manner and appearance of the women. When the inspections were first enforced many were exceedingly filthy in their persons and apparel, and obscene and coarse in their language, but this soon gave place to cleanliness and propriety."—(Page 894.)

Chapter XII., on the "General Hospitals," is a valuable contribution to the literature of hospital construction and management. It embodies a vast experience, and will repay an attentive study at the hands of all practical sanitarians. One of the novelties connected with the American War Hospitals was the so-called "Slush Fund." This was derived from the sale of bones, fat, stale bread, slops, flour barrels, straw, manure, waste paper, old newspapers, &c., and from a tax on the sutler. The amount of this "slush-fund" varied at different hospitals, but it was always considerable—at one hospital it averaged 200 dols. per month, at another 250 dols., and at a third as much as 400 dols. As the regulations did not take cognisance of a fund of this character, it was used for the purchase of such articles as in the opinion of the surgeon in charge seemed desirable for the general benefit. Most of the large hospitals provided excellent libraries for their patients, in part out of this fund. A melodeon for the hospital-chapel, and instruments for a military band, were purchased by many of the hospitals. The incidental expenses of lectures, concerts, theatrical and other entertainments on behalf of the patients, were paid from this fund. Many hospitals supplied themselves with a printing-press, which was of use in the current work of the establishment, besides providing for the issue of a local paper under some appropriate title, such as the *Weekly Report*. But at some hospitals, where the hospital-fund was inadequate to purchase the delicacies needful for the sick, this slush-fund was applied to supplement it.

Usually the "subsistence-steward" made the sales of the refuse matters which formed the basis of this fund, turning the money over to the hospital treasurer—generally one of the ward-physicians—whose accounts were audited by a Council of Administration, consisting of the three senior officers, exclusive of the surgeon in charge, on duty at the hospital.

Enough has been said to prove the valuable character of this great work, and we congratulate Dr. Smart on the conspicuous success as an author he has attained, and the Medical Department of the United States Army on the ability of its officers.

On the Ætiology of Diphtheria: an Experimental Study. By T. Mitchell Prudden, M.D. Pp. 50.

Studies on the Ætiology of the Pneumonia complicating Diphtheria in Children. By T. Mitchell Prudden, M.D., and William P. Northrup, M.D. Pp. 18.

These two papers, reprinted from the *American Journal of the Medical Sciences* for this year, bear evidence of conscientious and laborious work, and are valuable contributions to our, as yet, very imperfect knowledge of the ætiology of diphtheria. In the first paper Dr. Prudden gives a *resumé* of what has been done in elucidation of this subject, and shows that as yet no organism has been found which can with certainty be considered as the cause of the disease; for, in the case of Loeffler's bacillus, which, so far, has most in its favour, although it has been cultivated from the majority of cases examined, yet it has also been found in many instances which were not diphtheria at all.

Dr. Prudden has studied, by the most approved modern methods, twenty-four cases of diphtheria in children, and in twenty-two of these cases he has found a streptococcus which, both morphologically and in cultures, seemed to be identical with streptococcus pyogenes and streptococcus erysipelatosus. This streptococcus was found in large numbers in the local lesions, and in much smaller numbers and less constantly in the viscera, kidney, spleen, liver.

Next in frequency to the streptococcus was staphylococcus pyogenes albus or aureus; but this did not appear to bear any relationship to the extent or character of the pseudo-membrane. Other bacteria were found, but they were either scattered and without uniformity, or were such as occur in the mouths or air-

passages of healthy children. Loeffler's bacillus was not found in any of the cases.

Not only was the streptococcus the most abundant organism in the pseudo-membranes, but it was the only one which penetrated into the underlying tissues. It was found in large numbers in the necrotic tissue under the false membrane, in the ducts of the mucous glands, in the lymph spaces of the mucous membrane, and in the crypts of the tonsils; in smaller numbers and inconstantly in the lymphatic glands and viscera. Considerations are adduced which show that no importance can be attributed to the presence of staphylococcus pyogenes, and attention is concentrated on the streptococcus as the only organism which can be looked on as causing the disease. Its characters, microscopical and in cultures, are carefully described, and the results of inoculation experiments on hens, rabbits, and pigeons are detailed. Hens proved altogether refractory. In rabbits and pigeons the organism was frequently pathogenic, causing either suppuration, erysipelas, necrosis, or septicæmia, but never anything resembling diphtheria as seen in man. Reasons are given for the belief that animals do not suffer from diphtheria, whether contracted spontaneously or by experimental inoculation.

Very interesting are the results of control experiments, in which scrapings from the tonsils and throats of children not suffering from diphtheria were examined. In twenty-five cases of healthy children the streptococcus was never found. In six cases of children who were ill (two measles, two scarlatina, one follicular tonsillitis, one quinsy) the organism was found in two instances. Both of these were cases of scarlatina, occurring in the same house. Within a week of the examination, diphtheria of a severe form developed itself in both children, terminating, however, in recovery.

In striking contrast with these results were observations made on children who were not themselves affected with diphtheria, but who were exposed to infection in a hospital where the disease was of frequent occurrence. Forty cases were examined. In twelve of these cases streptococci were found in scrapings from the throat or tonsils; in two of these fatal diphtheria shortly afterwards supervened. From the dust of a room in which one of these children had lived the organism was cultivated. "All these observations taken together seem to lead us to so strong a presumption that the streptococcus is the causative factor in this group of cases, at least, of diphtheria, that it practically amounts to a demonstration."

Numerous facts and arguments are adduced to show that a very close relationship exists between erysipelas, phlegmonous inflammations, and diphtheria, and that so far as regards their causation the three conditions are identical, and are due to the same bacterium. It is shown that this view, so far from being inconsistent with our knowledge of these diseases, throws much light on the nature and spread of diphtheria.

It is believed that the streptococcus may lie harmlessly in the crypts of the tonsils until the conditions for its growth and multiplication are given by some lesion of the mucous membrane. From the enormous number of streptococci in the local lesion, and their very small number in deeper parts and in internal organs, it is argued that the constitutional symptoms are due to the absorption of a soluble poison or ptomaïn produced by the bacteria at the seat of their most active growth.

Finally, important experiments are described, which were made to determine the resistance of the streptococcus to drying, heat, cold, and germicides, and rules for prophylaxis are given, founded on the results of these experiments.

In the second paper the frequency of lobular and broncho-pneumonia in diphtheria is shown by statistics, from which it appears that over fifty-five per cent. of fatal cases present this complication. The characters of the disease are described, and the results of culture experiments made from the lungs and bronchi. Seventeen cases were examined. In all these, except one, the streptococcus described above was found. The one exceptional case was one of those in which the bacterium was not found in the throat lesion. In the other sixteen cases the organism was present in the throat as well as in the lungs. Control observations were made. Ten cases of lobular and broncho-pneumonia in non-diphtheritic children, and five healthy lungs from children who died of other diseases were examined. These children had lived under the same sanitary condition as those who died of diphtheria. In only one was the streptococcus found. This was a case of erysipelas, and the bacteria were present in the skin, liver, kidneys, and spleen, as well as in the lungs. In the lungs they were found only in the blood-vessels, and never in the exudation in the bronchi or air-spaces. "In this case there was a general infection through the blood-vessels with erysipelas streptococci, and although present in the blood-vessels of the lung they apparently had no relation either in situation or in numbers to the slight amount of broncho-pneu-

monia present." When the streptococci were injected into the tracheæ of rabbits a lobular and broncho-pneumonia was invariably set up, which resembled closely in its character that seen in diphtheritic children. It was found that the bacteria, at first present in the pneumonic foci, disappeared from these after the lapse of a few hours. This was probably due to phagocytosis, although absolute proof was not obtained. It serves to explain why in children the streptococci are found in large numbers in some foci while they are absent in others. In the infected animals the bacteria seemed not to enter the blood or to reach the viscera other than the lungs.

In the case of children affected with diphtheria, and who suffer from the complication of pneumonia, this is believed to be due to the inspiration into the lungs of the streptococcus which has been shown to occur in such quantities in the upper part of the air-passages.

Some experiments were made by injecting into the tracheæ of rabbits staphylococcus pyogenes aureus. This was found to cause a pneumonia very similar to that caused by the streptococcus diphtheriæ. "But the small number in which they (the staphylococci) were found in our cases of diphtheritic broncho-pneumonia, and the inconstancy of the occurrence, would lead us to the opinion that, while they may act as complicating agents, they are not the prominent ætiological factors in the disease." There is some reason for believing that in the ætiology of the broncho-pneumonia of measles and whooping-cough the staphylococcus plays an important part.

The text of these valuable papers is illustrated by several well-executed coloured plates.

An Essay on Asphyxia (*Apnœa*). By GEORGE JOHNSON, M.D. London: J. and A. Churchill. 1889. Pp. 53.

THE older physiologists described the condition of the heart after death by asphyxia as one of great distension of the right side, with comparative emptiness of the chambers of the left side. More recently it has been maintained that the true condition is one of distension of all four chambers, with a difference, if any, in favour of the left side. The distension is attributed to the enfeeblement of the muscular tissue of the heart due to the venous blood circulating in its vessels. The emptiness of the left heart, found

frequently if the examination is not immediately made, is explained by rigor mortis of the left ventricle which empties this chamber.

In the Essay before us, Dr. Johnson combats this view, and maintains that the facts as stated are erroneous and the explanations false. He asserts that the true condition is that described by the older writers—namely, extreme fulness of the right auricle and ventricle and emptiness of the left side, and that the true and only tenable explanation of this is to be found in a vaso-motor spasm of the pulmonary arterioles. In those rare cases in which the right side of the heart has been found empty after death, this is due to injury of some of the large veins in opening the chest. He adduces in support of his view much experimental evidence, partly of his own, partly from other physiologists. Particularly striking is an experiment made by the author with Professor Rutherford. In a curarised dog the heart was exposed, a manometer connected with one carotid, and artificial respiration then suspended. At first the blood pressure rose and the left cavities of the heart were seen to become distended; then a fall of arterial pressure took place, while the right side of the heart underwent enormous distension, the left chambers diminishing rapidly. This was the condition when death took place; but before this, when air was re-admitted, the right heart emptied itself through the lungs, the left heart filled, and the blood pressure rose. The explanation given of these phenomena is as follows:—The first effect of venosity of the blood is to cause a spasm of the systemic arterioles. This raises arterial pressure, and causes distension of the left heart. This is soon followed by extreme spasm of the pulmonary vessels, due probably to reflex action, which prevents the passage of the blood through the lungs, causes enormous distension of the right heart, deficiency of blood in the arteries, consequent fall of arterial pressure, and death from paralysis of the right ventricle. It is a most interesting fact that if animals, such as puppies, whose foramen ovale remains patient for several days after birth, be strangled, life is prolonged for a much longer time than in adult animals, and, after death, the great disparity in the fulness of the two sides of the heart is not noticed. That it is not the want of respiratory movement that causes the arrest of blood in the lungs, and consequent distension of the right heart, is shown by their occurrence when the animal is made to breathe nitrogen or nitrous oxide.

The author seeks the explanation of other morbid phenomena in

a spasm of the pulmonary vessels. His theory of the cause of cholera collapse is well known, and many of our readers will recollect the interest it excited at the time of the last epidemic of cholera in these countries. The collapse of asthma he explains in a similar manner. The congested or cyanosed condition of the lungs and hæmoptysis sometimes observed are explained by regurgitation and engorgement of the *bronchial* vessels. For observations on the conditions of the vessels in Bright's disease, Reynaud's disease, and valuable remarks on the condition of the pulse, we must refer to the Essay itself, which will be found replete with interesting speculations, and written in the terse and vigorous style so characteristic of its author.

We would notice, in conclusion, the nomenclature adopted—Asphyxia means pulselessness; apnœa, not the apnœa of physiologists, in which the animal feels no need for breathing, but the condition popularly but erroneously called asphyxia.

The Bacteria in Asiatic Cholera. By E. KLEIN, M.D., F.R.S. London: Macmillan & Co. 1889. Pp. 179.

THIS volume is a reprint of papers which have appeared in the *Practitioner*, and the general drift of Dr. Klein's conclusions is doubtless already well known to most of our readers. It is notorious that he differs completely from Koch, and most continental observers, on the importance which is to be attached to the presence of the comma bacillus. This organism he refuses to recognise as the cause of cholera, and in the work before us he expresses his views with great clearness and vigour, and supports them by arguments and observations, the importance of which it is impossible to ignore. His work is one of the highest importance, and is unquestionably one of the most noteworthy chapters in the controversy as to the causation of cholera—a controversy which appears still to be far from a satisfactory conclusion.

After a short history of the discovery of the comma bacillus, and of the work which has been done in cultivating it—a history given in the very words of Koch—Dr. Klein records his own observations on the distribution of the organism. In all recent cases of cholera it is present in the intestinal discharges, and in the contents of the intestine after death, but the number of bacilli bears no proportion to the severity of the disease; they occur in the intestine mixed with other organisms, and by no means in pure

culture, as maintained by Koch; and, except in cases where the *post-mortem* examination was delayed, or where the patient had been for many hours moribund, the tissues of the intestine were never found invaded by the bacillus; while in the blood, and in viscera other than the intestine it was never found.

In the following chapters the morphology of the comma bacillus is described, and the appearances it presents when artificially cultivated in agar, gelatine, on linen, &c.

Next is a description of various comma bacilli other than that of Koch, including (1) that of Finkler, which is now known to occur sometimes in the normal intestine; (2) the bacillus discovered by the late Dr. Lewis in the mouth. It would appear now that there are two comma bacilli present in the normal mouth—one identical with Finkler's bacillus, the other apparently identical, both in its shape and in its culture, with the so-called cholera bacillus. (3) The bacillus of Deneke from cheese. This bacillus differs slightly from Koch's bacillus, although the similarity between the two is great. (4) Comma bacilli, which the author has found in the intestines of monkeys suffering from diarrhœa. (5) Bacilli from the cæcum of normal guinea-pigs, which are said to have been mistaken for true cholera bacilli by Mr. Watson Cheyne. (6) Comma bacilli from a case of noma in a child; and (7) the bacilli recently described by Dr. Emil Weibel.

In the chapter on the diagnostic value of choleraic comma bacilli, Dr. Klein admits "that as far as our limited knowledge at present goes, in no intestinal disorder in man have comma bacilli behaving in artificial cultures like those of Asiatic cholera, been yet found in the intestinal evacuations." "Hence I agree to the proposition, that if, in any case of diarrhœa, the choleraic comma bacilli can be shown both by the microscope and by culture experiments to exist, then the suspicion that it may be a case of Asiatic cholera is quite justified. And it must be clear from this that the discovery by Koch of the choleraic comma bacillus is, on practical diagnostic grounds, of the utmost importance." The great difficulty, however, in making use of this test is pointed out, for in doubtful cases, where the discharges are still fæcal, the comma bacilli are mixed with so many other organisms that their detection, either by the microscope or by culture experiments, is a matter of difficulty, or even impossibility.

One of the most important chapters in the book is that on the experimental production of cholera. Dr. Klein has himself com-

pletely failed in producing symptoms of cholera in animals by infection with comma bacilli, and he criticises the contrary results of Koch, and other observers, with great cogency and force. He holds that the comma bacillus is a saprophytic organism, incapable itself of invading the tissues, but capable of producing a ptomaïn or ferment which, under certain circumstances, may give rise to septicæmia in rodents.

In the chapter on the infectiveness of cholera, the epidemiological objections to the causation of cholera by the bacillus are strongly brought forward. It is shown how, in every epidemic, there are places such as Lyons, Versailles, Birmingham, which, although in no way protected from the invasion of the bacilli, are nevertheless spared from epidemic cholera; and that in Calcutta cholera occurs only in scattered instances during the greater part of the year, becoming epidemic only in the spring. This is almost unintelligible if the comma bacillus be the cause of the disease, for the conditions for the growth of the organism are present when the disease does not occur, and it is a matter of certainty that the bacillus does not form spores, which, if they were formed, might be produced periodically. Further, the immunity from infection enjoyed by the attendants of the sick is difficult to explain; while the history of every epidemic shows that pre-existing disease of the intestine is no necessary condition for infection by cholera. The celebrated tank in Calcutta in which Koch found the bacillus was examined by Klein, who found its waters swarming with comma bacilli at a time when none of the people who lived on its banks, and used its water for all purposes, including drinking, were affected. When Koch examined the water, there was cholera among the natives living about the tank, and their excreta were thrown into the water. The presence of the bacillus in the tank was therefore the consequence, not the cause, of the epidemic, which agrees very well with the diminution of the bacilli in the water, as the disease died out among the people. Koch's statement that cholera abated at Fort William as soon as a good water supply was got, is shown to be erroneous; for the sudden decrease in cholera occurred nine years before the new water supply was introduced, and its introduction did not further diminish the number of cases. For the further arguments—all very difficult to answer—we must refer to the work itself.

Finally, it is shown that in the intestinal contents of cholera patients bacilli, other than the comma bacillus, are constantly

found—notably, a small straight bacillus, found in the lymph corpuscles in the mucous clumps. The disease might be attributed to this organism with the same justice as to Koch's bacillus.

In conclusion, we have only to express our sense of the great force of Dr. Klein's arguments, and to commend his work to the careful perusal of all those who are interested in medicine or pathology.

Medical Handbook of Life Assurance, for the use of Medical and other Officers of Companies. By JAMES EDWARD POLLOCK, M.D., F.R.C.P.; Consulting Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, &c.; and JAMES CHISHOLM, Fellow of the Institute of Actuaries, London, and of the Faculty of Actuaries, Scotland, &c. London: Cassell and Co. 1889. 8vo. Pp. 216.

SINCE the publication, in 1874, of the first edition of Dr.—now Sir Edward—Sieveking's well-known text-book, "The Medical Adviser in Life Assurance," no more important contribution to the literature of the subject has appeared than the volume now before us. Of the authors, one is Physician to the Imperial Life Office, the Queen Insurance Company, and the London and Lancashire Life Office; the other is Manager and Actuary of the Imperial Life Insurance Company, and author of "Tables for finding the values of policies of all durations." We are, therefore, bound to receive the work with all respect.

The authors state that their object has been to give plain instructions for the guidance of the Medical Examiner, and to afford him a ready handbook of reference on insurance rules.

A short preface and introduction are followed by eighteen chapters, two appendices, and a full index to the numbered paragraphs into which the work is divided. The topics discussed are—the nature of life assurance, the duties of a "Chief Medical Adviser" and of a Medical Examiner respectively, the influence of age, conditions of life, occupation, heredity, obesity, leanness, and alcoholism, on longevity; the condition of the heart as bearing on insurance; hæmoptysis, examination of the chest, the digestive and genito-urinary tracts; lesions of the nervous system; claims, varieties of life assurance, of modes of payment, of extra charges; forms of medical reports.

In Appendix I. an abstract is given of 100 typical cases, illus-

trating the mode of dealing with doubtful lives of all kinds. These cases have all occurred in actual practice, and have been selected from the records of various offices of the highest standing. Appendix II. contains two tables extracted and re-arranged from Tables contained in a letter by Dr. Ogle, addressed to the Registrar-General for England, and to be found in the Supplement to the Forty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England.

This brief synopsis will give some idea of the scope and useful character of the book. It has, of course, some faults, but, on the whole, it is a creditable production. Occasionally the reader comes across an obscure or even an erroneous passage. For example, paragraph 168 reads thus:—

"The first downward step in the often fatal events of mitral disease is when the ventricle of the heart begins to yield to the pressure of the regurgitated blood and dilates. . . . With lessened power of the ventricle, engorgement of the right side of the heart occurs, the return current of blood is blocked in the auricle, which in its turn dilates, the lungs become congested, the return of systemic venous blood is retarded, and the phenomena of congested lung, of congested venous and capillary systems, are not slow to follow."

Surely, in mitral valve disease, the lung congestion is, in the first instance, due to direct "backwash" from the dilated *left auricle*, and the phenomena of asystolism in the right side of the heart are later in point of time. Indeed, the first effect of mitral lesion on the right ventricle is to produce hypertrophy of that chamber; and so fluxionary hyperæmia of the lungs through the pulmonary arteries increases the mischief already caused by "backwash" from the left auricle.

Again, in paragraph 273, descriptive of boiling as a test for albumen in urine, we read: "The urine to be *previously* (to boiling) acidulated with diluted acetic acid, which will *redissolve* any phosphates which *may have been precipitated by the boiling*." (The Italics are ours.)

Lastly, paragraph 310 reads: "*Hemiplegia*, or loss of power of one side, *paraplegia*, or loss of power of both lower limbs, *aphasia* in any of their forms, need not be considered, as they entirely disqualify a proposer."

On pages 82, 83, 86, 88, the extraordinary mis-spelling "hæmophyllia," for "hæmophilia," is met with; and there are not a few glaring specimens of bad English—as, for example: "He should

not be a publican, or wine-taster, *nor* hotel-keeper" (page 56); "Insanity is eminently hereditary—about one in three or four *have* had a parent or parents insane" (p. 60); "the subject of such a murmur is generally young, more commonly female" (? "a female") (p. 73); "in all *which* present for examination the urine should be examined for blood or albumen" (p. 106); "the state called *plethora* is often *confused* (? confounded) with this—it has its own dangers, but they are not the same" (p. 127).

In paragraph 158, the venous hum of anæmia (Nonnengeräusch") is described as "a continuous *whizzing* sound in the jugulars."

These blemishes may, however, be forgiven in a book which contains so much valuable information, and they will, doubtless, disappear in a second edition at no distant date.

The Physiology of the Domestic Animals: a Text-book for Veterinary and Medical Students and Practitioners. By Robert Meade Smith, A.M., M.D. Philadelphia and London: F. A. Davis. 1889. Pp. 938.

The want of an English book on the physiology of the domestic animals must have been a very considerable disadvantage both to students and professors of veterinary medicine and surgery. Struck by the need for a good text-book, Dr. Smith, who occupies the Chair of Comparative Physiology in the University of Pennsylvania, has prepared the work before us, and has by so doing earned the gratitude of everyone interested in the advance of physiological knowledge.

In its arrangement the book does not differ materially from other text-books of physiology. It is divided into two parts—a general part, dealing with cells, their origin and development, and the physical and chemical processes manifested in them; and a special part, in which the different functions of the mature animals are described *seriatim*. The descriptions differ, however, from those in text-books of human physiology in the relative space given to the different subjects. Thus the section on mastication is very long, in consequence of the importance of the different methods of chewing adopted by the different classes of domestic animals, according to their dentition and the nature of their food, and in consequence of the importance of the teeth as indications of the age of animals. The article on the mammary secretion is longer than that on the secretion of urine, and so of other subjects.

The subjects are, without exception, treated with all due fulness, and the descriptions are all brought up to the knowledge of to-day. We would also particularly call attention to the sections on food and digestion as being of the very highest order of excellence. The style is clear and attractive, the printing and paper are good, and the text is illustrated profusely by good drawings. Besides the engravings in the text, there are several plates illustrating the different paces of the horse, the figures drawn from instantaneous photographs by Mr. Maybridge.

So far as we can judge, the statements in the text are of remarkable accuracy. There are, however, some minor errors—thus, in p. 907, the periods of gestation of some of the animals are given wrongly; that of the guinea-pig as three weeks, instead of nine weeks; that of the rat as five weeks, instead of twenty-two days, &c.

The work, however, taken as a whole, is, as we have said, of very unusual merit, and the author is to be congratulated on this addition to his already numerous contributions to physiological literature. His text-book is to be commended to all students of physiology and medicine. As in anatomy, so in physiology, it is only by a study of the lower animals that our knowledge of the human body can become complete and accurate, and there is no chapter of the work before us from which the student of human physiology will not be able to draw valuable information, by which he may extend his acquaintance with the processes which go on in the body of man.

Heredity—a Study; with special reference to Disease. By R. A. DOUGLAS LITHGOW. London: Baillière, Tindall & Cox. 1889. Pp. 247.

IN this very interesting volume the author shows the all-important influence exerted by heredity on the physiology, psychology, and pathology of every individual. He professes to give but a bare outline of the physiological and psychological aspects of the subject; but in the pathological part he deals more with particulars and goes through almost all the diseases and tendencies to disease to which man is liable, and adduces in each case evidence in support of the overpowering potency of hereditary influence. In conclusion, he discusses in beautiful and eloquent language the influence of heredity in determining man's moral nature.

The work is one which manifestly does not admit of analysis

within the space at our disposal; but we can recommend it as abounding in facts and speculations which cannot fail to attract the attention and interest the mind of every reader, whether lay or professional.

The Mechanism of the Circulation of the Blood through Organically Diseased Hearts. By Herbert Davies, M.D. Edited by Arthur Templer Davies, B.A., M.B. London: Lewis. 1889. Pp. 64.

In this little work the author attempts to trace the processes by which the heart with unsound valves is able for a time to maintain the circulation of the blood—that is, how the left heart is able at each beat to drive as much blood into the aorta as the right heart does into the pulmonary vessels. The argument is interesting and ingenious, but it seems to us to go not much further than this—the chambers become dilated because they are forced to contain more blood than in health, and their walls become hypertrophied because the maintenance of the circulation calls for abnormally great effort. The essay, however, is one which will repay the time spent in its perusal.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. By H. Power, M.B., and L. Sedgwick, M.D. Parts XIV., XV. **Ilo—Lin.** London: H. K. Lewis. 1889.

Part XV. concludes the third volume of this huge undertaking. The work continues to be executed in the same careful style as heretofore, and at the same necessarily slow rate of progress. We must only hope that the editors will be spared to fulfil their heavy task.

CHOLECYSTOTOMIES.

Of 78 cholecystotomies, Dr. A. Depage (*Journ. de Bruxelles.* No. 24) finds that 3 died of active peritonitis; 5 from hæmorrhage and collapse; 2 from biliary retention; 2 from effusion of bile into the peritoneum; 4 from secondary causes; and 2 from undetermined causes. [Of eleven cases operated on by Mr. Lawson Tait, there was but one death.—Ed.]

PART III.

SPECIAL REPORTS.

REPORT ON MASSAGE.

By Kendal Franks, M.D. Dub., F.R.C.S.I.; Surgeon to the Adelaide Hospital.

The rapid progress which massage has made in popular favour has led, among other things, to the publication of much literature on the subject. To most men in these countries this method or therapeutic agent was practically unknown until attention was called to it by the appearance of Dr. Weir Mitchell's book on "Fat, Blood, and How to Make them;" and the results of his treatment in hysterical cases were so remarkable that medical men then saw a vista opening before them for the treatment of a class of cases which hitherto had been the bane of every practitioner's life. And so it happened that "the Weir Mitchell system," composed as it is of several almost equally important elements, for a time became synonymous in people's minds with "massage;" and the public believed that when a patient was subject to a course of massage it practically meant that her disease was "hysteria." But as attention became more and more fastened upon the subject, and medical men began to see that there was more in it than a "fad of the day, which would die out as quickly as it came in," and especially when the marvellous results attained by Dr. Mezger at Amsterdam filtrated to these countries, and the writings of Professor von Mosengeil became known, then it began to be recognised that massage had a much wider field before it, that its sphere of usefulness was not confined to neurasthenic conditions, but that, whether employed for local ailments or for constitutional diseases, it had a hopeful future before it.

The introduction of the Weir Mitchell system into England, as the treatment *par excellence* in neurasthenia, is undoubtedly chiefly owing to the energy and warm advocacy of Dr. Playfair; and by his writings at various times in the journals he has brought nearer home to us the wonders that massage can effect in this class of

diseases. Following in his wake, Dr. Eccles has shown its applicability in other affections, and in a recent article in one of the journals has explained its use in habitual constipation. Several books have appeared in these countries on the subject, of more or less value, the most elaborate and thorough of which is by Dr. T. S. Dowse, entitled "Lectures on Massage and Electricity in the Treatment of Disease." Dr. Murrell's popular book on "Massotherapeutics," which has now reached a fourth edition, gives, in a shorter compass, and in a more readable form, a description of the various kinds of manipulations comprised in the term massage, and the diseases, both medical and surgical, in which it has proved successful. But Dr. Dowse's book is, perhaps, the most complete treatise published in these countries on the subject, albeit some of the book is laborious reading, and the first chapter eminently so. It is worth while reporting here his definition of massage, which runs thus:—"The application of sentient living matter to sentient living matter in multifarious ways." And again he thus describes its power:—"Massage does what no other therapeutic agent can do—that is, brings into activity potential energy, restores the normal to the abnormal, maintains stable equilibrium of force."

The manipulations employed in massage are usually recognised by the terms Effleurage, Pétrissage, Tapotement, and Frictions. These are convenient terms, and each has a well-defined meaning. *Effleurage* "is applied to all stroking forms of movement, light movements, free from pressure. . . . . These stroking movements may be carried on with the tip of one finger or with the tips of all the fingers . . . . with the backs of the hands, or with the sides of the hands, or with the palms . . . . also with light rolling to and fro. . . . . Effleurage manipulations are particularly applicable to the head, neck, and other extremities." Beuster, of Berlin, describes effleurage as consisting of "slow, gentle strokes in a centripetal direction along the course of the veins and lymphatics, made with the palm of the hand, and with the pressure intermitting, so as to cause passive peristaltic action."

Pétrissage means pinching, kneading, and working into the deep structures, by bringing, or rather massing, them together. This is, perhaps, the most important of all the manipulations. Dr. Reibmayer says:—"This manipulation consists of pressing, compressing, and squeezing the tissues to be subjected to treatment. Grasp the part and impart to it an oscillating movement, stimulating sometimes a single point and sometimes the whole tissue." "It is

a powerful excitant to the capillary circulation," says Lee, of Philadelphia, "a stimulant to secretion, and an awakener of dormant nervous energy." "The movement is made," says Murrell, "from below upwards, and the parts are squeezed in much the same way that one would squeeze out the contents of a sausage. Professor von Mosengeil always impresses on his pupils the necessity for 'working upstairs'—that is, from the extremities towards the centre of the body."

Tapotement is a kind of percussion which may be made with the tips of the fingers, the palms of the hand, the borders of the hand, or with the ulnar side of the loosely closed hand. This method is especially useful in regions of the body where pétrissage cannot be so effectually employed as in the limbs. Thus, tapotement movements are applied particularly to the back, chest, and abdomen, and to the trunk of the body generally. "It is sheer nonsense," says Dr. Dowse, "to say you can squeeze the liver, and empty it of its contents in the same way that you would squeeze a sponge. . . . You can stimulate this organ into activity by percussion and succussion."

Friction, or *Massage à Frictions*, is a complex movement combining two distinct modes of procedure, and is chiefly employed in the treatment of affections of the joints. Beuster thus describes it:—"The finger-tips of one hand held at right angles to the axis of the limb rub across and across in narrow ellipses, while the fingers of the other hand stroke parallel to the axis of the limb." The term is a bad one, for it has nothing to do with what we ordinarily understand by friction.

Such are the chief divisions of the manipulations of massage, and they are, of course, capable of indefinite subdivisions to suit the particular fancies of the operator. They, of course, require modification when applied to different regions, and in the books referred to these are amply explained.

Much has been written to show what are the physiological effects of massage. In this report I need only refer to a few, without attempting to enter fully into the subject. In Dr. Dowse's lectures he illustrates some of the notable changes observed after masséing the paralysed limb of a child suffering from anterior polio-myelitis. I reproduce his words here, because such an illustration explains the effects which may be anticipated in many cases submitted to this method of treatment, and especially the results sometimes procured in paralytic cases, more especially in those which have a

functional origin, but also in children where the lesion is undoubtedly organic. Some of these changes are objective and some are subjective. "We are now considering the local effects only. They are—increased temperature and change of colour from that of lividity to a bright red. These changes are, of course, associated with increased oxidation, increased molecular activity, and increased sensibility and metabolism. This morning I took the temperature of this child's limb very carefully at the inner part of the leg (the temperature of the ward being 64° F.), and I found it was below 70° F. After ten minutes' manual pétrissage, the temperature of the limb had risen no less than 17° F.—that is, to say, the temperature before massage was under 70° F., and after massage it was 87° F. We cannot over-estimate the value of this increase of temperature. It indicates, as I have just said (especially when associated with a red, healthy hue), increased metabolism and respiration of tissue. The reaction to the galvanic current before and after massage, in this form of paralysis, is of great interest. In this little child's leg that I now exhibit to you, we have a common instance of the usual reaction to faradisation and to galvanism. In infantile paralysis, during the acute stage of degeneration, we find an hourly decreasing response to the faradic current, until in three or fours days the muscles entirely cease to respond. . . . When this child first came under my care the reaction of degeneration was well marked, but by massage and galvanism the motor cells of the gray matter of the anterior horns of the spinal cord have gained by redevelopment compensatory power, and we now find, instead of an absence of muscular response to both galvanic and faradic currents, there is decided activity in both muscles and nerves to either current, though more to galvanism than to faradisation. . . I apply the electrodes of Stöhrer's battery to the limb, and the galvanometer indicates that eleven milliampères current strength are required to produce muscular response, the temperature of the limit being 70° F. I now massage and I raise the temperature to 95° F.—a rise produced by massage of 25° F. I now apply the electrodes to the limb, and if you watch the needle of the galvanometer you will see that, instead of eleven milliampères, only five are required to bring about muscular response. This is objective evidence of the most decided kind that massage lessens the resistance and increases the vitality of the limb."

The influence of massage upon muscle, in restoring its function, after this has been exhausted by exercise, has been experimentally

investigated by Zabludowski. Having first experimented on frogs, he then turned his attention to the muscles of man. Dr. Dowse thus describes his researches:—Zabludowski "found that after severe exercise a rest of fifteen minutes brought about no essential recovery, whilst after massage, for the same period, the exercise was more than doubled. One person experimented upon lifted a weight of 1 kilo. (2·2 lbs.) 840 times, at intervals of one second, by extreme flexion of the elbow joint. from a table upon which the forearm rested horizontally, and after this he could do no more. When the arm had been *masséed* for five minutes, he lifted the weight more than 1,100 times in the same manner as before without fatigue. The difference in muscular sensation was very striking after rest alone from work, in comparison with that after massage. In this case the person experimented upon was an expert subject for experiment, and after he had made 600 lifts of 2 kilos. (probably in the same manner as that just referred to) there was unvarying stiffness during a pause of five minutes for rest; on the contrary, after five minutes' massage, the muscles were supple and pliant."

Dr. Schreiber, in his "Manual of Treatment by Massage," translated by Dr. Mendelson, of New York, thus sums up the physiological effects of massage:—

"To cause an increased flow of blood to muscles and soft parts, increasing thereby the circulation, and removing accumulations of waste tissue whose retention causes various disturbance of function.

"To strengthen muscle fibres, and by getting up molecular vibrations to induce changes, not only on the muscle and nerve fibres, but perhaps even in the nerve centres themselves.

"To cause the resorption of exudations, transudations, and infiltrations, in such organs as are accessible. To effect the separation of adhesions in tendon sheaths and in joints, without recourse to the knife. To remove, by grinding away, intra-arthritic vegetations.

"To increase, by passive and active exercise of all the muscles, the oxidising powers of the blood, in this way correcting disturbances in its composition, and stimulating all the vegetative processes.

"To reduce the congestion of such internal organs as the brain, lungs, intestines, uterus, kidneys, &c., by increasing the flow of blood to the muscles.

"To stimulate directly the sympathetic nervous system, thus

increasing secretion and reflexly the activity of unstriped muscle fibre, and so relieving various functional derangements.

"By systematic exercise (health gymnastics) to educate morbidly-affected muscles, to convert abnormal into normal actions, and to suppress useless movements."

The number of diseases, both local and general, which have yielded to massage properly performed has in late years very much increased. All are practically agreed that this method of treatment is especially useful in all affections which can be directly or indirectly ascribed to hysteria, or, more properly speaking, to a neurasthenic condition. The treatment of these general affections consists of several elements, of which massage is only one. These elements are absolute rest, massage of the whole body, good feeding—in many cases over-feeding—isolation, and electricity, the last of these being perhaps of the least importance in the "cure." By a proper use of all these agents the nervous system—which is in a condition of more or less complete exhaustion—gets absolute rest. The neuralgias, described long ago by Sir Thomas Watson as the cry of the nerves for pure blood, gradually disappear as the blood becomes richer owing to the quantities of good food which are not only taken, but which are absorbed and digested; and this is rendered possible by the daily regular exercise which all the muscles of the body undergo at the hands of another, without any expenditure of nervous force on the part of the patient, thus causing increased elimination of waste materials from the body, and craving of the system for fresh material to replace them.

In hysterical cases, isolation from family and friends is considered by all the massage authorities to be an absolute necessity; and electricity is looked upon as a very useful adjunct in the treatment. Some prefer, like Weir-Mitchell, a galvanic current with very slow interruptions; others, like Dowse, prefer the continuous current, employed no stronger than is necessary to excite muscular response. The success which has been attained in these neurasthenic cases is now so well and so widely known that it is not necessary to refer to them further in this report.

In the treatment of paralytic affections, massage has been repeatedly tried and with varying success. In hysterical paralysis the success has been most marked. But, beyond these, there is a large class of cases of functional origin, as distinguished from organic disease of the cord, which have been in a very large number looked upon hitherto as incurable. At any rate, many of

them have remained, month after month, or year after year, uncured. In some of these cases, the diagnosis has been so difficult, sometimes impossible, that physicians have frequently suspected or asserted that at the root of the disease lay some organic mischief. Not very long ago, a distinguished authority declared that it was hopeless to massage any case in which the reflexes, patella tendon reflex and ankle clonus, were absent; and yet several cases have since been reported in which these reflexes were absent and yet they were cured by massage. Such has been the remarkable, nay astounding results in many of these cases, that most of the authorities are agreed that, in doubtful cases, the patient should be given the benefit of the doubt; should the disease turn out to be functional, he will be cured; and, if massage fail, it has only shared the fate of all other therapeutic measures.

There are some cases in which massage has apparently done harm in paralysis. Such cases are those "in which there is no wasting of the limb, but where more or less violent tremors are excited on the slightest attempt to perform any voluntary act, the rigidity coming on in paroxysms and being induced by any kind of irritation. There is no loss of sensation, and the muscles retain their electrical condition, the reflexes being unimpaired or even exaggerated. These are for the most part examples of lateral sclerosis, the lesion extending gradually downwards from the site of some pre-existing lesion."

But there are some true organic lesions of the spinal cords, giving rise to paralysis, which are amenable to massage treatment. First on the list stands infantile paralysis, acute anterior polio-myelitis. The treatment of this by massage has been fully described by Murrell in the *Lancet* for December 26th, 1885. Since then experience has accumulated, and treatment has proved efficacious, even in some cases of old standing—"In other forms of paralysis, massage is equally efficacious, and benefit will be experienced from its employment in pseudo-hypertrophic paralysis, facial paralysis, wasting palsy and allied affections." In writers' cramp the success obtained by a modified system of "rubbing" and gymnastics is well known.

Several cases of cure in chronic myelitis are on record. It is also said to be useful in Landry's paralysis—paralysis ascendens acuta; and has been successful in allaying the acute pains which accompany locomotor ataxy. In paralytic conditions of single nerves massage should be adopted.

I have already mentioned how general massage causes neuralgias

due to neurasthenic conditions to disappear—localised massage is frequently useful in localised neuralgia. In these cases tapotement along the course of the nerve is frequently beneficial. In sciatica massage often effects a cure more rapidly than any other therapeutic agent. The average duration of treatment is about two and a half weeks. After the acute stage is passed the sooner massage is tried the better; should the sciatica threaten to become persistent and chronic, of course if degeneration has set-in in the nerve, the chances of cure are diminished, and relief is all that can be anticipated. Stretching of the sciatic nerve round the great trochanter by extreme flexion of the thigh on the abdomen, the leg being kept extended, is often a valuable preliminary to the other manipulations. Dr. Dowse also recommends this procedure in his book, but his illustration of it represents the leg also flexed—a position the least appropriate for insuring a sufficient tension of the nerve to be of any use. Before leaving the nervous system, I may add that Dr. G. Norström, of Paris, has strongly recommended massage in the treatment of megrim. He "gives a detailed account of thirty-six cases, some of them of many years' duration, in which this mode of treatment was successfully pursued." The treatment is applied locally to the head and back of neck, according to the requirements of the case. "In congestive headache," Dr. Murrell writes, "effleurage should be performed gently over both the external and internal jugular veins, so as to facilitate the passage of venous blood. The effect is almost immediate, relief being obtained in a few minutes."

The employment of massage in many joint affections has become a recognised method of treatment, and is certain to become of more frequent use when surgeons become more generally acquainted with its results. In the treatment of sprains, whether recent or of old standing, massage is of the greatest possible advantage.

Dr. Murrell thus writes:—"The old fashioned plan was rest in bed and evaporating lotions; the modern treatment is massage and nothing else. As a rule, massage is not well adapted for cases in which there is acute inflammation, but an exception has to be made for sprains, a host of observers having recorded their opinion in favour of the innovation. The pain, the discoloration, and the swelling disappear as if by magic. It is important to begin the treatment at once, there being nothing to be gained by delay."

Dr. Douglas Graham records the results obtained in 308 cases of sprains, contusions of joints, and distortions—the average time

needed for recovery being *nine* days. The average of 55 cases treated by rest and compresses was twenty-six days. "Bergham has treated successfully by massage no less than 145 cases of recent traumatic joint affections, including contusions, distortions, and synovitis with effusion. Seventy cases affecting the ankle joint recovered on an average in *six* days, whilst 38 cases of old sprains required twenty-two days each. It was found that after a plaster-of-Paris dressing had been applied, even for a very short time, the duration of the treatment was much prolonged. . . . Dr. Rona, of Lausanne, says that it acts almost like magic in cases of synovitis, whether of rheumatic origin or resulting from injury. In the Prussian army, where treatment by massage is in certain cases obligatory, it is found that the average duration of the disability from sprains not treated by massage is *twenty-seven* days, whilst where masso-therapy is resorted to it is only nine days."

In June, 1887, Dr. Berne advocated the treatment of certain *fractures* by massage before the Société Médicale de l'Elysée in Paris. After showing the importance of a good venous and lymphatic circulation in fractured limbs. he insisted upon the necessity of keeping the joints in the neighbourhood movable and supple. It is particularly in fractures of the radius and fibula that massage is useful, the unbroken ulna or tibia acting as a natural splint. Where there is no displacement, extensive centripetal effleurage, commenced early in the treatment, will promote the absorption of the blood extravasated around the fracture. Von Mosengeil has shown that massage displaces effusions through the lymphatic network of the cellular tissue, and the same thing occurs where centripetal pressure is applied above the seat of fracture. The rapid retraction of the tendinous sheaths of the fingers when they are immobilised, as in a case of Colles' fracture, is a matter of common experience. Dr. Berne maintains that this accident, almost inevitable with the usual treatment, may be obviated by massage. He describes a case of fracture of the lower end of the fibula, in which the following treatment was adopted:—Massage was employed from the very first day, the limb being placed in a plaster *gouttière*, from which it was removed every two days for this purpose. After each *séance* of a quarter of an hour the apparatus was reapplied. From the *fifteenth* day the apparatus was laid aside, and the patient was able to walk without difficulty. The limb was in no way atrophied, and all the movements of the tibio-tarsal and tarsal articulations were natural.

Dr. Berne also advocates the use of massage in fractures about the elbow and patella, but he urges the necessity of caution whenever there is displacement or wound of the integument.

Dr. Lucas-Championnière, of Paris, is also a warm advocate of this treatment in fractures near to and involving joints. "Immobilisation is attended with considerable danger, whereas massage, skilfully applied, acts well from the first, relieving pain, favouring repair, preventing stiffness, and reducing the duration of the treatment." A remarkable case, he mentions, was that of a high Government official, who fell from his horse and fractured the radius. Massage was resorted to, and we are told that in forty-eight hours all pain had disappeared. At the expiration of four days he could write fairly well, and in a fortnight he had recovered every movement of the arm.

In fractures of both bones of a limb Murrell says it is necessary to wait until some union has taken place, in order to avoid displacement, and effleurage must be resorted to very gently, and in such a way as not to interfere with the apposition of the parts. All the authorities strongly recommend massage in fractures of the olecranon and of the patella, especially Continental surgeons, and Lucas Championnière records some remarkably rapid cases of union in transverse fractures of the patella in which he adopted this method.

In this report I have given very briefly only an outline of the method, with a glance at those cases in which massage has been conspicuously successful. There are many other indications for its use which cannot here be enumerated, but anyone who carefully studies the theory of masso-therapeutics, as Murrell calls it, and who has seen the practical results in a few cases, will quickly estimate the position it should hold among our therapeutic agencies, and will be able to form an opinion for himself as to those cases in which its employment is likely to be of service to the patient.

OXYGEN INHALATION.

Dr. W. G. Thompson (*Boston Medical and Surgical Journal*, No. 4) draws attention to the great increase in the consumption of oxygen gas by inhalation in cases of dyspnœa. From 200,000 to 300,000 gallons of the gas are annually used in New York. [Oxygen gas was freely used in this city for dyspnœa at the beginning of the century, as pointed out by Mr. Foy in Vol. LXXXVI., p. 295, of this Journal.—Ed.]

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.K.Q.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF PATHOLOGY.

President—J. Magee Finny, M.D.
Sectional Secretary—J. B. Story, F.R.C.S.I.

Wednesday, May 1, 1889.

Dr. E. H. Bennett in the Chair.

Exhibitions.

Microscopic sections from the tumour of the pons, exhibited at the meeting on the 22nd of March, were shown by the President of the Section.

Dr. M'Kee read a paper on the Distribution of Bacilli in Leprosy. He showed numerous microscopic specimens, some prepared by Professor Unna, and some by himself. He explained Unna's views, and pointed out the reasons which induced him to differ from them.

Mr. Lentaigne exhibited a tumour of the larynx.

Dr. M'Weeny said it belonged to the class of tumours of the connective tissue, and was obviously a sarcoma, containing chiefly spindle-cells and some giant-cells.

Arterio-sclerosis ; Renal Cirrhosis.

Dr. Nixon exhibited the viscera of a young married woman, aged thirty-two, who was admitted into hospital suffering from extreme gastric irritability, accompanied by hepatic tenderness. There was a history of most intemperate habits. Her parents were also addicted to the use of alcohol. During the course of the case attacks of diarrhœa set

in; the patient became drowsy and delirious; and she died of progressive asthenia about a month after her admission. The urine was examined, but it contained no trace of albumen.

The *post-mortem* examination disclosed a very wide-spread arterial degeneration, affecting mainly the arteries at the base of the brain and in the spinal cord. The coronary arteries were likewise affected by the atheromatous process, and in connection with this degeneration localised fatty changes were observed in the myocardium. The aortic valves presented evidences of inflammatory thickening, principally starting from the corpus Arantii; they were, however, competent. The interior of the entire of the arch of the aorta and the thoracic aorta was in a condition of atheromatous change. In the abdomen the spleen was found small and dense from increase of trabeculæ. The pancreas was in a condition of marked induration. The kidneys were in an advanced condition of cirrhotic change, the branches of the renal arteries being markedly thickened, and presenting open gaping mouths on section.

Dr. Nixon, in presenting the case as a contribution to the pathology of chronic alcoholism, drew attention to the three conditions under which arterio-sclerosis was met with. 1. Associated with coincident renal cirrhosis. 2. Independent of it. 3. When the wide-spread arterial degeneration was secondary to the changes in the kidneys induced by granular disease of those organs.

Dr. M'Weeny said under one microscope was a small artery with thickened walls from the pancreas. In the spinal cord there was a peculiar granular alteration of the grey matter. A small artery with thickened walls could be distinctly seen running in the midst of the grey matter. The white matter showed a superabundance of connective tissue between the nerve tubes. Under another microscope a section of the kidney showed shrinkage of the capillary tufts and alteration of the glomeruli into masses of fibrous tissue.

Cancer of the Liver Secondary to True Scirrhus of the Rectum.

Mr. Joseph Redmond showed specimens and microscopic sections from the following case:—

A man, aged thirty-six, cooper by trade, was admitted into the Mater Misericordiæ Hospital suffering from well-marked symptoms of cancer of the liver. His abdomen was enormously enlarged, and bulged abruptly forwards below the ribs. The liver was hard, greatly enlarged, irregular on the surface, from the presence of nodules, some of which were depressed in the centre, and extended downwards to midway between umbilicus and pubes. As he stated that he suffered from piles, an examination of the rectum showed the presence there of malignant disease. The patient gradually grew weaker, and died on the 24th of November, 1888. At the *post-mortem* examination, which was made by Dr.

M'Weeny, the liver was found to be enormously enlarged, and weighed, on removal from the body, 20 pounds 12 ounces. Scattered everywhere, both over the surface, and through the substance of the gland, were whitish-yellow nodules, varying in size from a pin's head to that of an orange. On examining the rectum a hard mass was found close to the anus, almost completely encircling the gut, and blocking up its lumen; above this the walls of the rectum were considerably and irregularly thickened, and were connected to the sacrum by a tough mass of neoplasm.

The omentum, diaphragm, and pleura were found to be more or less studded over with flat whitish masses.

Microscopic sections of the liver show the masses of carcinoma assuming an encephaloid type. Sections of the tumour in the rectum show no trace of glandular structure, &c., and the growth must be pronounced a scirrhous cancer.

Dr. M'Weeny said an inspection of the edges of the primary disease in the rectum showed it to be unquestionably scirrhus, and, therefore, they must conclude the disease in the other organ to be cancerous also. The alveolar arrangement was not generally distinct, but could be traced in places. Another microscope showed the disease of the rectum presenting isolated masses of epithelial cells embedded in an abundant connective tissue stroma, which stamped the disease as scirrhus.

Ulcer of Stomach.

Mr. Joseph Redmond exhibited a stomach showing perforation of both the anterior and the posterior walls. The specimen was removed from the body of a patient, aged twenty-six, who had been admitted into the Mater Misericordiæ Hospital on the 4th of February, 1889, presenting all the usual symptoms of perforation of the stomach, which untoward event had occurred three days prior to admission to hospital. The patient's condition improved so much under treatment that great hopes of his ultimate recovery were entertained; but symptoms, which unmistakably pointed to the occurrence of a second perforation, took place on the 6th of February, and the patient died of collapse in about twelve hours. The *post-mortem* examination showed that death was due to acute purulent peritonitis, following double perforation of the wall of the stomach. The opening in the anterior wall being the older, as evidenced by the presence of lymph, which glued it to the under surface of the liver. The opening in the posterior wall had no such appearance. Both ulcers were situate exactly opposite each other, and somewhat nearer the lesser than the greater curvature, midway between the cardiac and pyloric ends of the stomach.

Dr. C. Nixon said they could always tell whether there had been a perforation, with escape of the contents of either the stomach or the intestines, by the nature of the effusion and of the peritonitis that was

set up. If the peritonitis was set up merely from the extension of an ulcerous process in either intestine or stomach the effused product would be a flakey lymph. But if—excluding the case of tubercular disease of the mesenteric glands—they found purulent matter in the cavity of the peritoneum, they might be certain that perforation, with an escape of the gastric or intestinal contents, had taken place. They were told that gastric ulcer depended on emboli or thrombi occurring in the vessels of the stomach; but in all the cases of gastric ulcer that he had seen the existence of thrombus or embolism was—so to speak—conspicuous by its absence.

Friday, May 3, 1889.

The PRESIDENT (DR. FINNY) in the Chair.

Ununited Fracture of the Patella.

Dr. E. H. BENNETT presented to the meeting an example of ununited fracture of the patella, which showed an exceptional arrangement of the fragments and the structures related to them in the knee-joint. He showed also a cast taken many years ago from the injured limb at the close of the treatment of the fracture, for which injury the man had been admitted to Sir P. Dun's Hospital. He also showed two specimens of transverse fracture united by ligamentous union, and a dry preparation of ununited fracture which had been described by Professor R. W. Smith. Having referred to the account given by Mr. William Adams (Trans. Pathol. Soc. London, Vol. II.) of the modes of union by fibrous tissue, the ligamentous and the aponeurotic, Dr. Bennett showed that the specimen exhibited differed in its details from any of the thirty-one examples given in that account. In this specimen the upper fragment was completely concealed when the joint was opened in front by layers of fibrous and fatty tissue, which were formed by the thickened fascia, and were inserted into the margin of the femoral trochlea. The upper fragment articulated with the front of the femur by a synovial joint, which communicated by only a minute opening with the general cavity of the knee. The ligament of the patella had shortened to such a degree as to bring the apex of the lower fragment within half an inch of the tubercle of the tibia. Dr. Bennett showed also, by permission of Mr. Thomson, an example of fracture of the patella, which had been treated by suture. Subsequently the patient was admitted under Mr. Thomson's care for rupture of the bond of union with rupture of the skin, opening the knee-joint.

DR. KNOTT said he would like to have some explanation of what appeared to him to be a rather singular condition of the fragments. The

lower fragment appeared to have expanded to a size very much larger than it ought to have anatomically; but that might be explained by the inflammation which must have occurred after the original injury. He quite agreed with Dr. Bennett that the fracture was of an unexampled type.

Mr. William Thomson said, with regard to the specimen which he gave to Dr. Bennett, the wiring was done on the other side of the Channel. Surgeons here were entirely opposed to any such operation as wiring together the fragments of a recently-fractured patella. The Section had now before them an excellent example of what might result from the partial fixity that was accomplished by wiring. The slightest trip in walking made by a patient whose patella had been wired led to a refracture and separation of all the fragments.

Dr. Nixon asked to what Dr. Bennett attributed the shrinking of the ligamentum patellæ?

Dr. Bennett, in reply, said he could give no explanation of the shrinking. The fact that the ligament did shrink in these transverse fractures was first recorded and described by Malgaigne, his idea being that a degeneration of the fibrous tissues took place from the want of the muscle having something to do in the way of contracting. He went so far as to say that the projection forward of the fractured face of the lower fragment was the direct result of that—that it was the direct result of the fact that the ligament was longer on the anterior face than the posterior, by reason of the degeneration, and that consequently the other ligament pulled the stronger. Whether this was true or not he could not say. In Dr. Smith's case the shrinking was comparatively small. If the patella was rendered movable by any other cause than fracture no such shrinking occurred. With reference to Mr. Thomson's question, when he (Dr. Bennett) cut down into the synovial cavity he found that the prepatellar bursa was unusually enlarged, and that the two membranes had been blended into one, so that he could not tell where each ended. The curiosity of the specimen was that the two fasciæ had inserted themselves into the cartilaginous border of the femur, and had absolutely separated the synovial sac from the rest of the cavity. He believed that must have been brought about by this, that as soon as the man was let out of hospital he began to work at his business with his cab, and an irritation of the parts resulted which caused some slight inflammatory adhesion between the fascia and the trochlea of the femur; but it was remarkable that no such thing had been noticed in any other specimen.

Exhibitions.

Mr. William Thomson submitted an Undescribed Form of Dislocation of the Thumb. The base of the metacarpal bone of the thumb

was displaced from the trapezium inwards towards the middle line of the hand, and rested against the metacarpal bone of the first finger.

Mr. Thomson also exhibited a unique example of fracture of the clavicle, with dislocation of the sternal end.

Dr. Bennett had an impression that there was in Dr. Smith's collection a hand showing a dislocation of a somewhat similar description. He had never seen, however, any record of a lateral dislocation of the thumb. Writers on dislocations were in the habit of saying that they occurred "forwards and backwards" or "outwards and inwards." As to Mr. Thomson's example of fracture of the clavicle and dislocation he (Dr. Bennett) knew of no previous example of a clavicle being fractured and also dislocated. The specimen was of great interest owing to the fact that the cause of the injury had been so clearly defined; and he only wondered that, considering the weight of the man, something more had not happened.

Mr. Thomson briefly replied.

Imperforate Rectum in a Child.

The Secretary read a communication from Mr. Wm. Berry (Wigan) on a case of Imperforate Rectum in a Child, who lived for nineteen days, and then died, after an operation of inguinal colotomy.

The Section then adjourned.

Friday, May 31, 1889.

Sir William Stokes in the Chair.

Polypus of the Gum.

Mr. Arthur W. W. Baker read a paper on the above subject. These tumours vary from the size of a pea to a horse chestnut, and are found on the gum in the neighbourhood of diseased teeth. They are said to be chiefly caused by the ragged edge of a carious tooth, but it is probable that the ptomaïns resulting from the operations of the bacteria in the dentinal tubules have more to say to their ætiology than is usually supposed. Wedl and Rothman, in their writings, support this view. The growths in question are essentially papillomatous, and exhibit on section large branching papillæ covered with a thicker layer than normal of squamous epithelium. The polypi are purely local in their origin, and non-malignant. The paper was illustrated by microscopic preparations and photo-micrographs.

Dr. J. A. Scott said that the growths were papillomata. These growths were an advanced link of connection between papilloma and epithelioma, between which there was a well-known clinical difference.

Dr. Charles Ball said the tumours were an example of the way in which irritating discharges produced papillomatous and sometimes even adenomatous growths. He saw two cases recently in which there was well-developed cancer of the upper part of the rectum, with numerous small pedunculated growths, apparently benign in character, and yet adenomata occurred lower down, apparently due to the irritation produced by a continuous discharge. The formation of papillomata by irritating substances applied externally was a fact, of course, well known to them all.

Mr. Baker, in reply, said he was glad that Dr. Scott looked on them as a connecting link between papillomata and epitheliomata, for that was his (Mr. Baker's) own view with respect to them, although he could not say that the slides showed sufficient evidence of it.

Case of Brain Tumour with Thinning of Skull.

Dr. Ball showed a tumour of the brain (angio-sarcoma) as large as a turkey's egg, occupying the right occipital, and portion of the temporo-sphenoidal lobes. The symptoms during life were pain in head, vomiting, double optic neuritis, and the presence of a pulsating venous tumour on the vertex, from which large veins radiated, and beneath which a perforation of the skull could be felt.

The case was diagnosticated as one of perforating angioma, probably originating in the dura mater, and, acting on this diagnosis, simultaneous ligature of both external carotid arteries above the origin of the facial was had recourse to, with a view of diminishing the blood supply through the middle meningeal and temporal arteries. All symptoms were relieved for a month, after which they re-appeared, gradually increased in severity, and proved fatal, the patient remaining conscious and free from all paralysis to the last.

The autopsy showed that the venous tumour of the vertex was caused by a number of veins coming through the skull and carrying the blood from the great longitudinal sinus, the normal flow of blood into the right lateral sinus being prevented by the pressure of the tumour on the torcular Herophili, at which place it was adherent to the dura mater—a condition similar to the caput medusæ met with at the umbilicus in cases of obstructed vena cava. The inner surface of the skull was roughened and eroded over its entire extent. The calvaria were nowhere more than $\frac{1}{16}$ of an inch in thickness, and were perforated in several places. There were also a number of perforations in the base of the skull, and one as large as a sixpenny piece at the point at which the tumour pressed upon the junction of the great longitudinal and lateral sinuses. Dr. Ball drew attention to the identity of this specimen with the accurate descriptions given by Dr. Hale White of thinning of the bones from diffuse intra-cranial pressure in cases of cerebral tumour. He considered that

the marked improvement following operation for a short time could be accounted for only by the loss of blood at the operation, and subsequently a moderate secondary hæmorrhage relieving intra-cranial tension.

Dr. Patteson said the tumour was very sharply differentiated from the surrounding brain substance, and its outer surface was covered with a dense network of vessels, suggesting extreme vascularity. That proved to be the case on section, and in many places very little sarcomatous tissue could be found. Hæmorrhage had occurred in places, followed by necrosis, or fatty degeneration of the tissue. In one of the sections widely dilated vessels could be very well seen, while the walls of the tumour seemed to be composed of sarcomatous tissue. As to the ætiology of the tumour, he thought it highly probable that it originated in the peri-vascular sheaths, and developed from them, for in some places the vessels could be seen surrounded by rings of sarcomatous tissue. As to the little nodules removed from the dura mater, they also seemed to be sarcomatous tissue. It was right to state that this system of starving tumours by cutting off the vascular supply had not hitherto been attended with very satisfactory results, even in cases where the vessels dealt with directly communicated with the tumour.

Dr. Bennett said he was equally responsible with Dr. Ball for the error of diagnosis. The condition of the cranium was due to an increase of intercranial pressure—not a local, but a general increase, such as occurred in hydrocephalus in children.

Mr. Swanzy said that, with a tumour in the right occipital lobe, there should have been hemianopsia on the right side. That could hardly have been missed, and it would have pointed to a lesion very far from the position in which the only lesion was supposed to be.

Dr. Myles said that lesions of the occipital lobe were associated with colour-blindness. It was very difficult to conceive how a large tumour like this could have existed without giving rise to paralytic symptoms. In fact, as far as they could see, the presence of a pulsating tumour of the scalp appeared to have over-ridden everything else in the diagnosis.

Dr. McKee observed as to the absorption of the bone supposed to have taken place here, so far as he could judge from a glance at the bone, it seemed to have been directly produced by the convolutions of the brain itself which were very much flattened. No doubt there must have been increased internal pressure primarily; but another possible factor in the case was the distinct disturbance in the venous circulation that was proved to have taken place by the presence in the tumour of the enlarged veins on one side. No doubt the nutrition of the bone must have been interfered with by the mechanical hyperæmia.

The Chairman said it appeared to him that the only analogy that could be urged between the condition of the bone of the skull in this case, and in cases of hydrocephalus, was that in both cases the bone was thinner

than the normal degree. But the analogy went no further. In hydrocephalus the interior of the bone was extremely smooth. Here the whole interior surface of the skull was abnormally rough; and there were the stalactitic growths which he had never seen in hydrocephalus.

Dr. Bennett said the Chairman had misunderstood him. In hydrocephalus, where the sutures of the skull were as yet unjoined, the whole skull could expand freely, and therefore there were no such appearances in the interior of the bone as presented themselves here. But when the bones could not expand, then the conditions seen in the present specimen arose.

Dr. Ball (in reply) said the first question was as to whether there had been erosion of the inside of this skull or not. At to this a great deal depended on what was meant by erosion. That the surface of the bone had been absorbed in many places there was no doubt; and the inner surface of the external plate had become exposed.

Melanotic Sarcoma of the Eye.

Dr. E. H. Bennett exhibited an example of this disease remarkable for its slow growth, while its histological characters were eminently malignant.

The disease had been detected as intra-ocular more than eight years ago at St. Mark's Hospital. Some considerable time since the globe had given way, and a fungus protruded, which had attained the size of a closed fist.

Of late this fungus bled freely, and it was only this symptom which at last frightened the patient—a woman nearly fifty years of age—and caused her to submit to its removal.

The removal was facilitated by the fact that under ether the muscles no longer supported the fungus and its sack, the remains of the globe, was exposed by the tumour falling out on the face. The bleeding, which was very free, was at once arrested on the removal of the globe.

In section the tumour was seen to be formed of a jet-black mass, except in part, which wore a lobe of white tissue strongly contrasted with the remainder. Microscopically, the tissue appeared in many parts that of alveolar sarcoma.

Dr. Patteson said the parts of it most remote from that which projected externally were very much pigmented, but other unpigmented portions had the character of alveolar sarcoma, the cells being in little groups, separated by very delicate bands of connective tissue. These cells were of a distinctly sarcomatous type, the majority being spindle cells; and from these the tumour, as the melanotic portion was approached, merged into spindle-celled sarcoma; and then the cells became more and more pigmented, until finally nothing was found but a mass of pigment, and no trace of cellular substance was left.

Abstract of Paper on "A Fœtus with Cystic Kidneys."

Dr. Bagot showed a female fœtus with congenital cystic degeneration of the kidneys. Externally, with the exception of the enlargement of the abdomen, the child presented no malformation. On opening the abdomen he found that it contained about 2 oz. of peritoneal fluid. The peritoneum covering the kidneys was thickened, and showed signs of inflammation, band-like adhesions passing to the intestines. The latter were in some places adherent to each other. The ureters were extremely thin, but pervious. Both kidneys were symmetrically enlarged; but cysts were nowhere visible on their surfaces. On section their normal structure was seen to be replaced by an extremely fine network of minute cysts, thus resembling the variety of kidney described by Virchow as "the fine cystoid." The bladder and urethra were normal under the microscope. The tubules could be seen to have undergone an irregular dilatation, some appearing normal, others more or less dilated, till in most parts they have become replaced by large epithelial-lined spaces. The epithelium of the tubules appears in many places to have undergone proliferation—a condition which is also present in some of the glomeruli. The blood vessels are greatly congested, and hæmorrhages into the tissues may be seen here and there.

Concerning the ætiology of this condition various theories have been put forward, amongst which that by Virchow has been the most generally accepted—viz., that it is caused by atresia of the papillæ, due to a fœtal inflammation, brought about by an abundant deposit of urinary salts in the tubules. Thorn, however, believes that this condition is more frequently brought about by inflammation passing from the calices to the substance of the papillæ; while Chotinsky says that occlusion of the tubules is to a great extent due to successive multiplication of the epithelium. Others hold that it is due to a primary fault of development, and that in this condition "we have really to do with a more or less persistent mesonephros, associated in greater or less degree with normal renal tissue."

The Section adjourned.

SECTION OF SURGERY.

President—Austin Meldon, President of the Royal College of Surgeons, Ireland.

Sectional Secretary—Mr. W. Thornley Stoker.

Friday, June 7, 1889.

The President in the Chair.

The Death of Dr. Robert M'Donnell—Vote of Condolence.

Mr. H. G. Croly—It is my sad privilege to move the following resolution:—

"That the Surgical Section of the Royal Academy of Medicine in Ireland expresses its deep sorrow at the death of Dr. Robert M'Donnell, and its sense of the loss which surgical science has sustained by the removal of one of its most active workers; and that the sincere condolence of the Section be conveyed to his widow and family in their bereavement."

It is unnecessary to add to the terms of the resolution beyond expressing what you all feel as well as I do, that not only has the College of Surgeons sustained a deep loss by the untimely removal of so distinguished a member as the late Dr. Robert M'Donnell, but his death is also a great loss to the public.

Mr. A. H. Corley—I have, indeed, a melancholy pleasure in seconding the resolution; for, to me personally, the death of Dr. Robert M'Donnell is one of the greatest losses—one of the greatest griefs—I have had since I knew any member of the profession. Dr. Robert M'Donnell was a man who never let small matters disturb his sense of public duty and right. He was a loss to the Royal Academy of Medicine, of which he was so distinguished a President, and he was almost an irreparable loss to the surgical branch of the Profession.

The President—In putting this resolution I have only to say that in the death of Dr. Robert M'Donnell I have lost one of my oldest and dearest friends.

The resolution was adopted.

Linear Proctotomy.

Dr. Ball defined the operation of linear proctotomy as the making an incision through the anus and rectum directly backwards to the coccyx and hollow of the sacrum; the following being the indications for its performance:—

1. For the cure of non-malignant strictures of the rectum, in which gradual dilatation by means of bougies or other instruments is either impracticable or inefficient.

2. For the removal of growths situated high up in the bowel or in the hollow of the sacrum.

3. As a palliative measure instead of colotomy in advanced malignant disease.

4. As a preliminary step to amputation of the rectum.

Dr. Ball brought forward two cases illustrating the first class:—

Case I.—Male, aged twenty-three years, five years' syphilitic history. Considerable ulceration of lower part of rectum with tight stricture above. Bougies gave rise to great irritation, so linear proctotomy was performed. Relief to obstruction was immediate, and the ulceration healed without further difficulty. There has been no recurrence of the stricture (twenty months after operation), and the amount of incontinence is extremely slight.

Case II.—Female, aged forty-seven years, for five years suffered from a morphœa-like condition, which produced puckered sub-cutaneous cicatrices over both breasts, heart, and abdomen. She also had some ascites. The vagina was contracted, the uterus fixed, and a tight, smooth stricture of the rectum existed. This became so tight that her life was threatened from intestinal obstruction. The stricture, which would only admit about a No. 9 catheter, was divided, and all symptoms of obstruction obviated. Six months subsequently she developed stricture of the œsophagus, which proved fatal, no recurrence of the rectal trouble having taken place.

The pathology of this case was doubtful, apparently not carcinoma; but, as she died down in the country, no autopsy could be obtained.

The following are examples of the removal of neoplasms by means of linear proctotomy:—

Case III.—Male, aged sixty-three years, rectum obstructed by soft tumour filling hollow of sacrum. An attempt to remove the mass by linear proctotomy was so far successful that the tumour, which proved to be a lympho-sarcoma, was completely extirpated; but, unfortunately, the patient died from septic peritonitis.

Case IV.—Male, aged twenty six years, much worn down by the continuance of dysenteric-like discharge from rectum. A soft sessile growth could be felt at the highest limit accessible by digital examination, but, with the aid of linear proctotomy, it could be completely controlled. It was extremely vascular, and, in the patient's exhausted condition, destruction by Paquelin cautery was deemed safer than extirpation. The patient recovered very perfectly, completely regaining his strength, and there has been, so far (eighteen months), no recurrence and no inconvenience from incontinence.

Class 3. Dr. Ball did not consider that linear proctotomy could be favourably compared with colotomy for the relief of obstruction due to malignant disease. And in the 4th Class, the consensus of surgical opinion was certainly in favour of adopting linear proctotomy as a preliminary to amputation of the rectum, and Dr. Ball had hitherto invariably practised it.

The PRESIDENT—The operation affords a very fair chance of curing non-malignant stricture of the rectum almost immediately.

SIR WILLIAM STOKES said it was new to him to hear that Verneuil advocated division by the knife instead of by the cautery, as he happened to be present at a discussion when that operator advocated the latter mode, but since then he seemed to have modified his views. Indeed, the tone of the discussion to which he referred was that the operation, whether done with the cautery or with the knife, was only temporary in its nature. He wished to ascertain whether Mr. Ball recommended any, and, if so, what precautions to keep open the stricture, for in the justly-popular operation of internal division in organic stricture of the urethra, unless precautions were taken to keep the urethra dilated, the stricture returned.

DR. BALL, in reply, said Verneuil's operation, as described in his paper, was first a division of the tissues by means of an écraseur, which was next inserted through a cannula and then through an opening made with a cautery. He was not in the habit of using the knife. With regard to the subsequent treatment, in both cases of stricture a full-size bougie was passed for a certain time; but in one of the cases which he saw within the last week, the bougie had not been passed for over a year, and no difficulty whatever occurred in getting satisfactory relief from the bowels. Between stricture of the urethra and stricture of the rectum there was this difference, that the urine flowed through the same channel after the operation as before, while as the result of the operation for stricture of the rectum a new exit was made for the discharge from the bowel—namely, immediately below the tip of the coccyx, and therefore the probability of subsequent stricture was very slight.

Some Points in the Treatment of Intestinal Obstruction.

MR. W. THORNLEY STOKER read a paper on some points in the treatment of intestinal obstruction. He dealt chiefly with the treatment of those cases where the obstruction was owing to the paralysed condition of the bowel due to the accumulation of fæces or flatus. In this class of cases a lumbar operation is rarely indicated, and, owing to the extreme meteorism, laparotomy is usually a very fatal proceeding. He urged the adoption of other measures previous to any precipitate opening of the abdomen, advocating the employment of pressure and massage, and the judicious use of purgatives. Of these latter remedies he considered

undue fear existed. Of belladonna, when pressed to its full effect, he spoke highly, and quoted cases in evidence. Local treatment by rubefacients he stated his disapproval of, as he did also of opium, which he regarded as masking symptoms, and doing little or no good. Tapping the bowel with an aspirator needle or fine trochar he had found of great use where much tympanites existed. A large part of the paper was devoted to an attack on the "long tube," which he considers a dangerous and useless engine, productive of no effects which cannot be gained by the use of a shorter and safer instrument.

The PRESIDENT was of opinion, notwithstanding the strong outcry against opium, that that drug, if of use in any case of abdominal surgery, gave relief in intestinal obstruction. In his own practice he invariably used it subcutaneously. Inversion he had seen practised, but never with good results. The enema was of great use—not by O'Beirne's tube, but by the ordinary one. Puncture of the intestine also gave relief; but instead of the aspirator he preferred using a trochar ($\frac{1}{10}$ in. in diameter) and cannula.

DR. MYLES, observing that Mr. Stoker mentioned a case as presenting symptoms of paralytic obstruction, a difficult question in the examination papers, "Enumerate the different varieties of intestinal obstruction, and give the diagnosis," at once arose to his mind, and he said to himself, "Here at last the difficulty is solved." But it seemed that Mr. Stoker was carried away by his noble rage against O'Beirne, and forgot to give the information which he so anxiously anticipated. There were, however, some points extremely interesting raised. Mr. Stoker had stated that by cautious injection any fluid could be propelled to any distance along the colon. When he was house surgeon at Steevens' Hospital, in a case of constipation, he directed an injection to be given slowly till the man could hold no more, as he regarded the measure of the purgative to be the amount the man could hold. The operator proceeded leisurely and quietly with his task, and in 25 minutes the message was brought that he was still pumping. And what was the fact? With each stroke of the pump the fluid that was being injected came out of the man's mouth.

In reference to the belladonna treatment, he had again and again seen it used in $\frac{1}{6}$-gr. doses, but generally combined with opium. Although the theory was that opium was opposed to belladonna, Brunton showed that it acted in conjunction with belladonna, and instead of producing paralysis, it converted the normal into a tetanic spasm, which was as near being tetanus as the muscle could go.

MR. CORLEY feared that Mr. Stoker's observations on the *furor operandi* might, as coming from a surgeon of his experience, have a more serious result than he anticipated; for the present tendency was to try a great many remedies before thinking of operative procedure. As regards punc-

ture, he recalled a case in which he was called on to operate. The surgeons were in favour of laparotomy; the physicians of colotomy. Lumbar colotomy was performed with success; but the patient died three days afterwards. Before the operation the patient had been punctured nearly a dozen times in various parts of the abdomen, a quantity of air escaping. Dr. Reuben Harvey made a *post mortem* examination, but was unable to find the site of a single puncture. As regards opium, he coincided with Mr. Stoker, and he was sorry to hear the President giving the weight of his authority to the use of opium. He had found that it was a dangerous agent, masking the symptoms, while he doubted if it assisted the action of the bowels. Opium lulled the pain and the acute symptoms, but it landed the patient and the doctor in a fool's paradise. In his experience he did not remember a case in which he saw any advantage from it, while he recalled two or three in which the drug accelerated fatal termination by postponing the operation beyond the time at which it was likely to be efficacious. He did not think that most surgeons were likely to operate too soon, and that, notwithstanding the modern views of peritoneal surgery, they would be disposed to open the abdomen rashly for intestinal obstruction, remembering that every variety of intestinal obstruction had been known to yield to the influence of medicine.

Mr. Kendal Franks endorsed Mr. Corley's observations as to the likelihood of the opening passages in Mr. Stoker's paper being fraught with danger. He had himself never seen the abdomen opened too early, but he had seen it opened many times too late, and the tendency among young surgeons was not to open it in a hurry.

Mr. William Stoker said the choice of treatment, whether palliative or operative, depended on the diagnosis as to whether the obstruction was due to deficient force or to increased resistance. No doubt, the two conditions were interwoven; but once the surgeon made up his mind that the obstruction was due to increased resistance he need not dread to interfere. He had himself tapped the distended bowel, and he never dreaded doing so, remembering that the three layers—namely, the muscular and elastic—between the serous and mucous, which were non-distensible, would not continue opposite each other unless the distension remained constant, but would slip and leave a valvular opening. As regards medical remedies and the requisite doses, the extract of belladonna was a drug of varying potency.

Mr. Doyle considered it the duty of the medical man to administer the enema himself.

Mr. W. Thornley Stoker, in reply, said he had at the outset disclaimed any intention of arguing against operation, and early operation, too, as he was not himself either afraid to use the knife or likely to avoid a sufficiently early operation. He had also particularised and dealt only with the class of cases in which operation was rarely, if ever, admis-

sible—namely, those in which the intestinal obstruction was due to fæces or flatus producing the paralysis of over-distension, and it was in reference to these that he spoke of the remedies.

He agreed with Mr. Corley's observations about opium. As regards tapping the bowel, he used an aspirating needle the size of a French No. 5 catheter with a stilette to clear it when it became impacted, but he did not use the aspirator as a means of suction.

The Section adjourned.

CHOLERA AND DRINKING-WATER.

We extract the following from the *New York Medical Record* (Feb. 23, 1889):—In a report of Chief Engineer F. G. M'Kean, U.S.N., on the Takashima coal mines of Japan, reference is made to the means taken to prevent cholera by the use of distilled water. He reports that until the last year cholera appeared regularly on the island (Takashima), and made great ravages in its dense and peculiar population. It is stated that during ten days of 1885, nine hundred persons died of the disease, so that it became necessary to construct special furnaces for burning the dead. It was suspected that the germs were in the water brought from the mainland for drinking purposes, and hence the distillers were put in operation, and stringent orders issued that the water from the mainland was to be used only for washing purposes. Last year there were no cases of cholera on Takashima, though it raged on the neighbouring islands, and the immunity is affirmed to be due to the purity of the drinking-water.

CONGRÈS FRANÇAIS DE CHIRURGIE.

An official announcement has reached us that the fourth meeting of the French Surgical Congress will take place in Paris from the 14th to the 20th of October of the present year. The Congress will assemble in the great Theatre of the École de Médecine, under the presidency of M. le Baron Larrey. The opening meeting will be held on Monday, October 14, at 2 p.m. The following questions are to be submitted for the consideration of the Congress:—1. The immediate and remote results of operations undertaken in cases of local tuberculosis. 2. The surgical treatment of peritonitis. 3. The treatment of aneurysms of the extremities. The Secretary-General of the Congress is M. le Dr. S. Pozzi, 10 Place Vendôme, Paris. M. F. Alcan, 108 Boulevard Saint-Germain, Paris, will receive members' subscriptions (20 francs) and payment for the volumes of the Congress.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, August 10, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	July 20.	July 27.	Aug. 3.	Aug. 10.		July 20.	July 27	Aug. 3.	Aug. 10.
Armagh -	20·7	15·5	15·5	25·8	Limerick -	21·6	20·2	20·2	24·3
Belfast -	25·2	24·1	25·9	25·9	Lisburn -	14·5	14·5	24·2	0·0
Cork -	12·3	16·9	18·8	20·1	Londonderry	21·4	10·7	10·7	16·0
Drogheda	33·8	16·9	38·1	21·1	Lurgan -	25·7	25·7	15·4	30·8
Dublin -	22·4	24·4	20·5	23·9	Newry -	14·0	24·6	21·1	35·1
Dundalk -	4·4	21·8	13·1	13·1	Sligo -	24·1	9·6	4·8	19·2
Galway -	16·8	16·8	16·8	3·4	Waterford -	41·7	20·8	13·9	20·8
Kilkenny	8·5	21·1	25·4	8·5	Wexford -	8·6	29·9	12·8	17·1

In the week ending Saturday, July 20, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 18·7), was equal to an average annual death-rate of 21·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 21·9, and in Edinburgh it was 15·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in nine of the districts to 4·8 in Sligo. The 5 deaths from all causes registered in the last-named district comprise 1 from whooping-cough. Among the 111 deaths from all causes registered in Belfast are 2 from

measles, 1 each from typhus, whooping-cough, diphtheria, and simple continued fever, and 9 from diarrhœa. The 16 deaths in Limerick comprise 1 from whooping-cough, and 1 from diarrhœa; and the 18 deaths in Waterford comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 175—89 boys and 86 girls; and the deaths to 154—75 males and 79 females.

The deaths, which are 4 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·7 in every 1,000 of the estimated population. Omitting the deaths (2 in number) of persons admitted into public institutions from localities outside the district, the rate was 22·4 per 1,000. During the first twenty-nine weeks of the current year the death-rate averaged 25·6, and was 5·0 below the mean rate in the corresponding period of the ten years 1879–88.

Twenty-seven deaths from zymotic diseases were registered, being one in excess of the average number for the corresponding week of the last ten years, and 13 over the number for the week ended July 13. They comprise 7 from measles, 4 from whooping-cough, 1 from enteric fever, 12 from diarrhœa (9 of which were of children under 5 years of age), 1 from dysentery, &c.

Sixteen cases of enteric fever were admitted to hospital, being an increase of 9 as compared with the admissions for the preceding week: 9 enteric fever patients were discharged, 2 died, and 39 remained under treatment on Saturday, being 5 over the number in hospital on Saturday, July 13.

The admissions of measles cases continue to fluctuate, the number for this week being 14, or 7 under that for the preceding week, which showed an increase of 11 as compared with the number for the week ended July 6. Thirteen patients were discharged, 2 died, and 47 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The other hospital admissions for the week include not a single case of typhus, and only one of scarlatina: 5 cases of the former and 7 of the latter disease remained under treatment in hospital at the close of the period.

Twenty-four deaths from diseases of the respiratory system were registered, being 3 over the average for the corresponding week of the last ten years, and 9 over the number for the week ended July 13. They consist of 12 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, July 27, the mortality in twenty-eight large English towns, including London (in which the rate was 18·6),

was equal to an average annual death-rate of 21·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·9 per 1,000. In Glasgow the rate was 20·0, and in Edinburgh it was 15·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·6 per 1,000, the rates varying from 0·0 in eight of the districts to 10·5 in Newry—the 7 deaths from all causes registered in this district comprise 2 from whooping-cough, and 1 from diarrhœa. Among the 106 deaths from all causes registered in Belfast are 1 from typhus, 2 from whooping-cough, 6 from enteric fever, and 19 from diarrhœa; and the 15 deaths in Limerick comprise 1 from scarlatina and 1 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 180—88 boys and 92 girls; and the deaths to 168—69 males and 99 females.

The deaths, which are 21 above the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·8 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 24·4 per 1,000. During the first thirty weeks of the current year the death-rate averaged 25·5, and was 4·8 below the mean rate in the corresponding period of the ten years 1879-88.

Thirty-one deaths from zymotic diseases were registered, being 4 over the number for the preceding week, and 9 in excess of the average for the 30th week of the last ten years. They comprise 4 from measles, 3 from whooping-cough, 4 from enteric fever, 11 from diarrhœa (9 of which were of children under 5 years of age), 1 from dysentery, &c.

The number of cases of enteric fever admitted to hospital during the week is 9, being 7 under the admissions for the preceding week, but 2 over the number for the week ended July 13. Eleven enteric fever patients were discharged, and 37 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, July 20.

Only 9 cases of measles were admitted to hospital against 14 for the preceding week, and 21 for the week ended July 13. Sixteen patients were discharged, 1 died; and 39 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 4 cases of typhus, and 4 of scarlatina. In the preceding week no case of the former and only one of the latter disease was received. Seven cases of typhus and 10 of scarlatina remained under treatment in hospital on Saturday.

Twenty-four deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, and 4 over

the average for the 30th week of the last ten years. They comprise 11 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, August 3, the mortality in twenty-eight large English towns, including London (in which the rate was 18·4), was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·3 per 1,000. In Glasgow the rate was 20·5, and in Edinburgh it was 17·1.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 21·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in Galway, Kilkenny, Wexford, Dundalk, Lurgan, and Armagh, to 9·7 in Lisburn—the 5 deaths from all causes registered in the last-named district comprising 2 from enteric fever. Among the 114 deaths from all causes registered in Belfast are 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 2 from enteric fever, and 18 from diarrhœa. The 29 deaths in Cork comprise 1 from whooping-cough, and 3 from diarrhœa. Among the 15 deaths in Limerick are 1 each from scarlatina and typhus; and the 6 deaths in Waterford comprise 2 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 174—90 boys and 84 girls; and the deaths to 140—73 males and 67 females.

The deaths, which are 11 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·7 in every 1,000 of the estimated population. Omitting one death of a person admitted into a public institution from a locality outside the district, the rate was 20·5 per 1,000. During the first thirty-one weeks of the current year the death-rate averaged 25·4, and was 4·7 below the mean rate in the corresponding period of the ten years 1879–88.

Seventeen deaths from zymotic diseases were registered, being 14 under the number for the preceding week, and 9 below the average for the thirty-first week of the last ten years. They comprise 4 from measles, 1 each from typhus, whooping-cough and enteric fever, 7 from diarrhœa (all of which were of children under 5 years of age), 1 from dysentery, &c.

The number of cases of enteric fever admitted to hospital is 13, being 4 over the admissions for the preceding week, but 3 under the number for the week ended July 20. Five enteric fever patients were discharged during the week, 1 died, and 44 remained under treatment on Saturday, being 7 over the number in hospital on Saturday, July 27.

Only five cases of measles were admitted to hospital against 9 for the preceding week, and 14 for the week ended July 20. Sixteen patients

were discharged during the week, and 28 remained under treatment on Saturday, being 11 under the number in hospital at the close of the preceding week.

No case of scarlatina was admitted to hospital, and there was only one admission of a patient in typhus: 9 cases of the former and 6 of the latter disease remained under treatment in hospital on Saturday.

Eighteen deaths from diseases of the respiratory system were registered, being equal to the average for the corresponding week of the last ten years, but six under the number for the week ended 27 July. They consist of 7 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, August 10, the mortality in twenty-eight large English towns, including London (in which the rate was 16·4), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·6 per 1,000. In Glasgow the rate was 21·0, and in Edinburgh it was 15·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·4 per 1,000, the rates varying from 0·0 in seven of the districts to 9·4 in Limerick—the 18 deaths from all causes registered in that district comprising 2 from scarlatina, 2 from whooping-cough, and 1 each from diphtheria, enteric fever, and diarrhœa. Among the 114 deaths from all causes registered in Belfast are 1 from typhus, 1 from diphtheria, 2 from simple-continued fever, 4 from enteric fever, and 25 from diarrhœa. The 31 deaths in Cork comprise 1 each from whooping-cough and diarrhœa; and the 9 deaths in Waterford comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 174—99 boys and 75 girls; and the deaths to 168—83 males and 85 females.

The deaths, which are 7 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·8 in every 1,000 of the estimated population. Omitting the deaths (6 in number) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first thirty-two weeks of the current year the death-rate averaged 25·4, and was 4·5 below the mean rate in the corresponding period of the ten years 1879–88.

Thirty-one deaths from zymotic diseases were registered, being 14 over the number for the preceding week, and 4 over the average for the thirty-second week of the last ten years. They comprise 3 from measles, 4 from whooping-cough, 1 from enteric fever, 15 from diarrhœa (14 of which were of children under 5 years of age), 2 from dysentery, 1 from erysipelas, &c.

The number of cases of enteric fever admitted to hospital is 5, being 8 under the admissions for the preceding week. Five enteric fever patients were discharged, 2 died, and 42 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, August 3.

Only 2 cases of measles were admitted to hospital, against 5 for the preceding week, and 9 for the week ended July 27. Fifteen patients were discharged, and 15 remained under treatment on Saturday, being 13 under the number in hospital at the close of the preceding week.

No case of scarlatina was admitted to hospital during the week, and but 1 case of typhus; 7 cases of the former and 6 of the latter disease remained under treatment in hospital on Saturday.

Eighteen deaths from diseases of the respiratory system registered, being equal to the number for the preceding week, and 4 under the average for the corresponding week of the last ten years. They consist of 11 from bronchitis and 5 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of July, 1889.

Mean Height of Barometer, - - -	29·944 inches.
Maximal Height of Barometer (on 1st, at 9 a.m.),	30·520 „
Minimal Height of Barometer (on 21st, at 9 a.m.),	29·498 „
Mean Dry-bulb Temperature, - - -	58·3°.
Mean Wet-bulb Temperature, - - -	54·9°.
Mean Dew-point Temperature, - - -	51·9°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·389 inch.
Mean Humidity, - - - - -	80·0 per cent.
Highest Temperature in Shade (on 6th), - -	77·8°.
Lowest Temperature in Shade (on 8th), - -	44·0°.
Lowest Temperature on Grass (Radiation) (on 8th),	38·6°
Mean Amount of Cloud, - - - -	56·3 per cent.
Rainfall (on 15 days), - - - -	2·570 inches.
Greatest Daily Rainfall (on 22nd), - - -	·624 inch.
General Directions of Wind, - - -	N.W., W.

Remarks.

Warm and fine at the beginning and close, this month on the whole proved changeable, showery, and cool, with a great preponderance of North-westerly winds—a very common state of things in an Irish July. Speaking generally, however, the weather was favourable from both a sanitary and an agricultural point of view.

In Dublin the mean temperature (58·7°) was decidedly below the average (60·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were

58·3°. In the twenty-four years ending with 1888, July was coldest in 1879 (the "cold year") (M. T. = 57·2°). It was warmest in 1887 (M. T. = 63·7°), and in 1868 (the "warm year") (M. T. = 63·5°). In 1886, the M. T. was 61·0°; in 1888, it was as low as 57·3°. From this, 1887 proves to have been the warmest since the present records commenced, whilst July, 1888, was almost the coldest.

The mean height of the barometer was 29·944 inches or 0·022 inch above the average value for July—namely, 29·922 inches. The mercury marked 30·520 inches at 9 a.m. of the 1st, and fell to 29·498 inches at 9 a.m. of the 21st. The observed range of atmospherical pressure was, therefore, 1·022 inch — that is, a little more than an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 58·3°, or 1·7° below the value for June, 1889; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 57·4°, or 2·2° below the average mean temperature for July, calculated in the same way, in the twenty years, 1865–84, inclusive (59·6°). The arithmetical mean of the maximal and minimal readings was 58·7°, compared with a twenty-three years' average of 60·8°. On the 6th, the thermometer in the screen rose to 77·8°—wind W.N.W.; on the 8th the temperature fell to 44·0°—wind N.N.E. The minimum on the grass was 38·6° on the latter date. The rainfall was 2·570 inches, distributed over 15 days. The average rainfall for July in the twenty-three years, 1865–87, inclusive, was 2·350 inches, and the average number of rainy days was 17·1. The rainfall, therefore, was somewhat above the average, while the rainy days were below it. In 1880 the rainfall in July was very large—6·087 inches on 24 days; in 1871 also 4·391 inches fell on 28 days. On the other hand, in 1870, only ·539 of an inch was measured on 8 days; in 1869 the fall was only ·739 of an inch on 9 days, and in 1868, only ·741 of an inch fell on but 5 days.

High winds were noted on 8 days, but attained the force of even a moderate gale on only two occasions—viz., the 21st and 27th. Temperature reached or exceeded 70° in the screen on only two days. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In July, 1888, the maximum was 68·7°. There was a storm of thunder, lightning, and heavy rain and hail on the 16th. Fog was observed on the 9th and 30th.

The drought observed in June continued through the first week, but until Saturday, the 6th—which was a really hot day—temperature ruled lower than in the previous week. The prevailing distribution of atmospherical pressure was anti-cyclonic over the British Islands, with areas of relatively low barometer over both the Baltic and the Mediterranean. At the beginning and close of the week the wind was northwesterly, but in the interval light to moderate easterly breezes (E. to N.E.) prevailed. Up

to and including Wednesday the mornings were cloudy—indeed on Tuesday, the 2nd, slight drizzle was observed at 7 30 a.m. Electric cirri showed on Thursday afternoon, and the atmosphere was generally hazy through the week. On Saturday a remarkable rise of temperature occurred—the maximum, 77·8°, being also the maximum of the present season so far as it has gone. In Dublin the mean height of the barometer was 30·295 inches, pressure ranging from 30·520 inches at 9 a.m. of Monday, the 1st (wind, N.W.), to 29·926 inches at 9 p.m. of Saturday, the 6th (wind, W.N.W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 61·9°. The mean of the daily highest and lowest shade readings of the thermometer was 61·7°. The screened thermometers rose to 77·8° on Saturday, having fallen to 50·1° on Thursday.

Although less settled than before, the weather was most favourable in all respects throughout the second week (7th–13th inclusive). Early on the morning of Sunday, the 7th, sharp showers fell, yielding a rainfall of ·019 inch—the first recorded since June 14. Rain fell on Tuesday and Wednesday abundantly over the greater part of the United Kingdom, the west and centre of Ireland only escaping the copious showers. On Sunday rather a deep barometrical depression lay over the S. of Norway, and fresh N.W. winds with cool changeable weather prevailed in the British Isles. On Monday morning a new depression appeared off the Land's End, whence it travelled slowly to the S. of Ireland, causing the copious rains already mentioned. On Wednesday this system began to move rapidly in a northeasterly direction, and in 24 hours its centre reached the Christiania Fjord, in Norway. Fine, clear weather now set in, so that Snowdon was seen from the Wicklow Coast on Thursday afternoon. On Friday and Saturday very shallow disturbances led to local showers or rains in parts of England and Ireland. In Dublin the mean height of the barometer was 29·847 inches, pressure ranging from 29·586 inches, at 9 a.m. of Wednesday (wind, W.N.W.), to 30·031 inches at 9 p.m. of Friday (wind, E.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57·7°. The mean of the daily highest and lowest temperatures in the screen was 58·1°. The shade thermometers rose to 69·5° on Thursday (wind, W.S.W.), having fallen to 44·0° on Monday (wind, N.N.E.). Rain fell on four days to the amount of ·757 inch. The heaviest fall in 24 hours was ·455 inch on Tuesday.

During the week ended Saturday, the 20th, changeable, cloudy, and cool weather was general over the Northwest of Europe. The distribution of atmospherical pressure was cyclonic—systems of low pressure, with secondary shallow depressions, causing heavy showers in most places from time to time. On Sunday, the 14th, the atmosphere was very clear, so that the Mourne and Welsh Mountains were plainly seen from the Co. Wicklow. On Monday and Tuesday heavy showers of rain and hail, with occasional thunder and lightning,

prevailed in and about Dublin. Three fine, but cloudy, cool days followed, but on Friday night a depression of considerable intensity brought a fresh rainfall. Saturday was close and showery at first, but in the afternoon the weather improved. In Dublin the mean height of the barometer was 29·861 inches, pressure ranging between 30·020 inches at 9 a.m. of Thursday (wind, N.W.), and 29·533 inches at 1 p.m. of Saturday (wind, W.N.W.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 56·3°. The arithmetical mean of the daily highest and lowest shade temperatures was 56·2°. On Wednesday the thermometer rose to 64·6°, having fallen during the preceding night to 46·0°. Rain fell on four days—the total measurement being ·723 inch. The largest rainfall in 24 hours was ·279 inch on Tuesday. Nearly as much (·260 inch) was credited to Friday. Hail, thunder, and lightning were observed on Tuesday.

In the fourth week (21st–27th inclusive), the weather was again very unsettled, but on Thursday the rain ceased, and bright sunshine, with high, bracing, northerly winds took their place. Atmospherical pressure was very unstable—a series of depressions passing eastwards along irregular paths until Saturday, when a system of high barometer became established over the West of Ireland. Very heavy showers fell in and about Dublin on the first three days of the week—the resulting measurement of rain being nearly an inch, including ·624 inch registered on Monday. Wednesday broke dull and wet, but in the afternoon conditions improved. During the last three days of this week very strong northerly (N.W. to N.) winds prevailed, accompanied at first with cloudy, but afterwards with clear, bracing weather. In Dublin the mean height of the barometer was 29·772 inches, pressure having fallen to 29·498 inches at 9 a.m. of Sunday (wind, W.S.W.) and risen to 30·097 inches at 9 p.m. of Saturday (wind, N.W.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 55·9°. The mean of the daily maxima and minima was 57·7°—the highest shade temperature was 68·6° on Saturday; the lowest was 48·9° on Thursday Rain fell on five days to the amount of 1·048 inches. The heaviest downpour in 24 hours was ·624 inch on Monday.

During the last four days, quiet summer-like weather prevailed. On the 29th and 30th there was much fog in the Irish Sea, and on the 31st a considerable increase of temperature took place.

The rainfall in Dublin during the seven months ending July 31st has amounted to 13·146 inches, on 112 days, compared with 7·935 inches on 80 days during the same period in 1887, 15·994 inches on 109 days in 1888, and a twenty-three years' average of 14·749 inches, on 112·8 days.

At Greystones, Co. Wicklow, the rainfall in July, 1889, was 2·42 inches, distributed over 13 days. Of this quantity ·60 inch fell on the 9th, ·32 inch on the 19th, and ·29 inch on the 20th. Since January 1, 15·68 inches of rain have fallen at Greystones, on, however, only 66 days.

PERISCOPE.

YELLOW FEVER.

The microbe of this disease, whether real or imagined, is generating a good deal of controversial heat. It appears that Dr. Paul Gibier and Dr. Domingoes Freire jointly discovered a microbe in the blood of yellow fever patients; but on the 13th of February, 1888, the former, in a paper read before the Paris Académie des Sciences, repudiated his own share in the discovery, and declared, as the result of new researches, that he had been unable to find the same micro-organism in the blood, or any special microbe in the urine. On the 24th of July, 1888, Dr. Gibier stated to the Académie de Médecine that he had found a bacillus of his own (which he fully described) in the dark-coloured matter which the intestines of yellow fever patients contain. It is classed as a spirillum. He infers that the treatment should be "repeated purges and disinfection of the intestines." Dr. Freire replies in a pamphlet, citing several observers who, like himself (and Dr. Gibier formerly), *have* found a microbe in the blood. His micrococcus, which he figures, is the same as that present in the black vomit. In the *Journal of the American Medical Association* of February 2nd, 1889, the New York correspondent informs us that Dr. Gibier had just presented to the New York Academy of Medicine his report of his researches in Florida, undertaken by direction of the French Government. In this he re-affirms his discovery of the specific microbe of yellow fever in the intestinal canal. "As in his former observations, the blood did not contain any microbe, and he added that never in a single instance did the microscopical examination of the blood, either in its fresh state or in various preparations, ever show anything abnormal." Who shall decide when microscopists disagree, when one cannot see what another sees, and the same sees a thing at one time of his life and sees nothing at another?

INTUBATION.

The following particulars of 42 cases of intubation for laryngeal stenosis, performed in the Willard Parker Hospital, N.Y., are taken from a paper published in the *New York Medical Record* of Feb. 23rd, 1889, by Dr. F. K. Priest, Resident Physician. The operation was performed in 42 out of 266 cases, with 26·19 per cent. of recoveries. In 35 diphtheritic membrane was present; in seven, of which only one recovered, none was detected, but the cervical glands were enlarged. In the successful

cases the average time of retention of the tube was $6\frac{1}{2}$ days. The average age was 2 years and 11 months; greatest, 7 years; least, 9 months. Swelling of cervical glands was absent in 3 cases only.

ANTIPYRIN AND LANOLIN.

We understand that these two important additions to modern Materia Medica have just been adopted as official in the Austrian Pharmacopœia—lanolin as the ointment base in the preparation of unguentum hydrargyri.

THE TENTH INTERNATIONAL MEDICAL CONGRESS.

Professors von Bergmann, Virchow, and Waldeyer give notice that, according to the resolution passed at the Washington meeting, Sept. 9th, 1887, the tenth International Medical Congress will be held in Berlin. The Congress will be opened on the 4th and closed on the 9th day of August, 1890. Detailed information as to the order of proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies at Heidelberg on the 17th of September in the current year.

THE ARMY MEDICAL DEPARTMENT.

We have been requested by the Director-General of the Army Medical Department to publish the following list of the successful candidates at the recent competitive examination for commissions in the Medical Staff of her Majesty's Army, held in August, 1889:—Order of merit—1. Waller, H. J., 3,085 marks; 2. Bewley, A. W., 3,080; 3. Mould, W. T., 3,030; 4. Hughes, M. L., 2,910; 5. Stone, C. A., 2,800; 6. Way, L., 2,730; 7. Moores, S. G., 2,640; 8. Winter, H. E., 2,630. [We hope to print copies of the Questions set to the candidates at this examination in the next number of the Journal.—Ed.]

HYPNOTISM EXTRAORDINARY.

Dr. Pinel, of Paris, has succeeded in hypnotising patients by means of the phonograph. All the commands given by the instrument were readily obeyed, and suggestions of every sort were as effectually communicated by the phonograph as they were by word of mouth to the hysterical persons operated on.

ANÆSTHETICS IN MIDWIFERY.

Our American brethren are not infrequently drawing the attention of the profession to Benjamin Rush's prophecy of the use of anæsthetics in midwifery. Rush, who was not only Physician to George Washington, and a general practitioner, but also a man-midwife, after observing a painless delivery whilst the mother was intoxicated, prophesied that some future day an anæsthetic would be found capable of rendering

childbirth painless. Rush's published opinions were, during his lifetime, violently attacked by Cobbet, whose abuse of the "Rush-light" was incessant.

YELLOW FEVER IN BRAZIL.

At Santos, a city of 14,000 inhabitants, more than five hundred deaths occurred in one month.—*Phil. Med. and Surg. Rep.*, June 1, 1889.

A NEW BACTERICIDE.

The advocates of chemical antiseptics are fertile in resource; no sooner is one chemical agent discarded as useless and disappointing than another of highly-extolled virtues is brought forward. The last of the numerous progeny of chemical bactericides is sodium-dithio-salicylate II., which has a similar formula to sodium-dithio-salicylate I., but is much more active. This new and invaluable addition to the *armentarium chirurgicum* is the especial foe of the *Staphylococcus aureus*. It is also recommended as an invaluable remedy for rheumatism in doses of from one to two grains. Like the majority of new remedies, its appearance is ushered in with a chorus of praise.

REMARKABLE CASE OF HYDROPHOBIA.

The *Lancet* of the 6th of July, 1889, p. 42, records a case of hydrophobia occurring in a woman, aged forty-two years, thirty months after she was bitten by a dog.

DANGEROUS CHLOROFORM.

Professor Menthin, of Warsaw, has recently concluded a series of investigations of samples of German-made chloroform, which produced alarming symptoms when inhaled. He found the specimens examined were impure, leaving a residue on evaporation.

CHANCRE.

Extra-genital chancre was detected by Dr. Buckley (*Medical News*, March, 1889) in the following positions:—On the lip, 31 times; finger, 7; breast, 6; tonsil, 5; tongue, 5; cheek, 3; chin, 2; eyelid, 2; nose, 1; ear, 1; hand, 1; forearm, 1; sacral region, 1.

CANCER.

Dr. Mortimer Grenville writes to the *Lancet* of the 20th of July to recommend the "very frequent administration" of papaïn and thallin as a remedy for carcinoma. He also recommends that carcinomatous patients be fed exclusively on vegetable diet. The theory is, that the medication depresses "the vitality of the morbid growth." [A list of the

drugs that have been advocated as reliable cures for cancer might, if published, restrain the unwise encomiums with which every new remedy is ushered into notice.—Ed.]

GASTRO-ENTERITIS OF INFANTS.

Dr. Edward P. Davis recommends, for the catarrh of gastro-enteritis in infants, intestinal irrigation with a solution of 1 to 1,000 of thymol, or a sodium salicylate solution (gr. 20 to ʒxx. of water). "The child is laid across the lap of the nurse. . . . . Placing the back of the left hand against the child's nates, the oiled catheter is introduced by the right hand and pushed gently into the bowel. . . . . The fountain syringe should be held from two to three feet above the patient and fluid allowed to flow freely. . . . . The passage of fluid is a positive comfort; and it is not an unusual occurrence for infants to fall asleep on the nurse's lap while receiving intestinal irrigation, and sleep for an hour or two, the temperature falling considerably."—*Medical News*, July 6, 1889.

PILOCARPIN IN MANIACAL EXCITEMENT.

Dr. Samuel B. Lyon, of the Bloomingdale Asylum, New York (*Journal of Nervous and Mental Diseases*, April, 1889), gives the history of a case of maniacal excitement, in a woman of about thirty years of age, in which the hypodermic injection of one-eighth of a grain of the hydrochlorate of pilocarpin terminated the convulsive movements, produced a copious perspiration, a fall of temperature, and a return of consciousness, and this was followed by a quiet sleep.

CHOREA.

Prolonged sleep is the latest remedy proposed for chorea by Dr. Charlton Bastian. The treatment was, however, recommended by Dr. Bridges in the *Practitioner* for March, 1877.

EXTIRPATION OF THE PROSTATE GLAND.

At the recent Congress (we have no meetings now-a-days) of German surgeons in Berlin, Professor Kümmel, of Hamburg, read a paper giving the results of partial extirpation of the prostate gland in six patients. He performs suprapubic cystotomy, and then with a thermo-cautery destroys all parts of the gland that project into the bladder. Of the six patients one died of collapse, in one the result was negative, and four are declared to be cured.

A ROYAL BEVERAGE.

Sir William Jenner has advised the Queen to give up champagne and claret for the present, and to drink whisky and Apollinaris water (*Truth*).

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"The Phœnix" Digestive Food.

The Glen Mills Company, Dublin, have presented us with a sample tin of a new digestive food introduced by them under the name of "The Phœnix." It is recommended in the case of infants and delicate children, as well as of invalids, particularly when suffering from indigestion, debility, constipation, and so on.

A sample of this food was submitted by the Company for analysis to Dr. Charles R. C. Tichborne, F.C.S., who reports most favourably upon it. A careful analysis gave the following percentage results :—

		On the Dry.
Moisture	11·52	
Starch, Sugar, &c.	62·27	70·38
Fatty Matter	3·21	3·62
Albuminoids	18·33	20·71
Cellulose or Woody Fibre ...	1·14	
Mineral Matter	3·53	3·98
	100·00	

Dr. Tichborne found that this digestive food is of the most nutritious character, for it gives over 98 per cent. of the dry ingredients as being digestible food. We may divide this into 74 per cent. of heat-giving food (the carbohydrates), with about $20\frac{3}{4}$ per cent. of nitrogenous.

This food, although it consists entirely of the farina from three cereals, is much more nitrogenous than ordinary flour, as evidenced by the analysis. It gives a food resembling a mixed vegetable and animal diet. The proportions in which the cereals have been mixed are evidently well considered. It is finely prepared, and made ready for digestion.

We have tried this food, and consider that it is very palatable and appetising, qualities of great importance when considering its value as a diet. For adults it should be boiled for twenty-five minutes, and made as consistent as jelly. About two tablespoonfuls may then be mixed with half a pint of water and flavoured with salt according to taste. A little butter may be added with advantage, and a few drops of lemon juice also improve the flavour.

It should be eaten morning and evening at first, and once a day for some time after its good effects have been felt. At dinner it may be taken in soup.

For infants, the food should be blended with water and boiled until it assumes the consistency of cream. It will pass through the feeding bottle in the ordinary way. We understand that "The Phœnix" has given great satisfaction as a food for weak and delicate children at the National Children's Hospital, Harcourt-street, Dublin.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*A Contribution to the Surgery of the Abdomen.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery, St. Vincent's Hospital, Dublin.

(*Continued from page 111.*)

BEFORE referring to cases in which laparotomy is justifiable, and, indeed, imperatively demanded, I desire to call attention to a strange condition, produced under certain circumstances, by inflation or injection. I allude to a state of collapse more or less profound and prolonged, followed by fever of varying intensity, and usually intermittent. In reference to this state, the following are the points which strike me as of most interest:—

1. Prostration sets in within two or three hours of the distension of the bowel.

2. Before a rise of temperature occurs, a clammy perspiration breaks out over the patient's head, face, and chest.

3. The fever usually reaches its height in from eight to ten hours.

4. Then for from two to five days there is a gradual fall, the evening temperature being a degree or so higher than the morning.

5. When the attack is severe and prolonged, the face assumes a dusky appearance, and the eyes appear glassy, and the tongue becomes foul.

The circumstances under which I have seen this febrile condition are—(*a*), when the bowel is inflamed; (*b*), if there be ulceration in

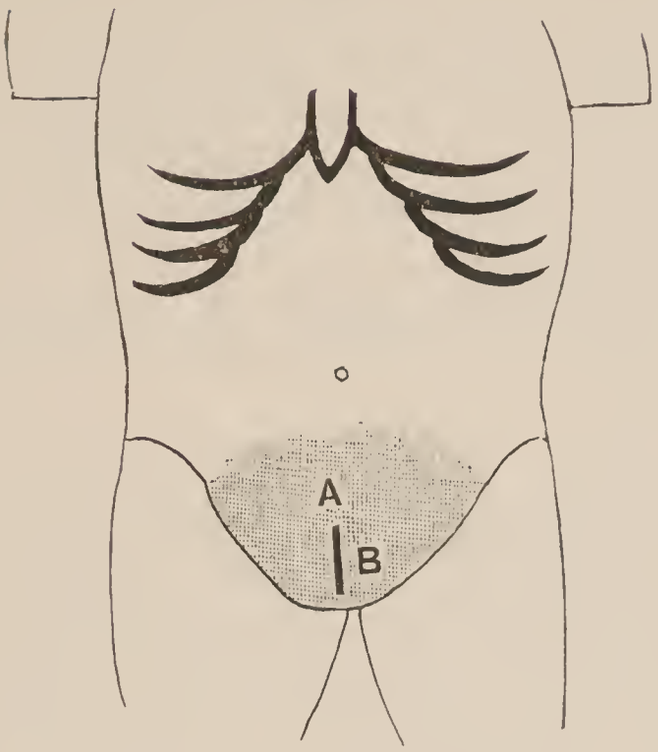
the distended part; (*c*), where there has been long-standing stricture, more or less complete. I have frequently compared this affection with the more marked varieties of catheter fever, and there is a great resemblance between them. My notion of its causation is that hyperdistension of the bowel, when intermittent, causes expulsion of the contents of the terminal capillaries at the diseased area; thus, absorption of septic products from the neighbouring ulcers is allowed, and continued pressure drives colonies of micrococci along the lymphatics and venules of the part. Added to this is the danger of microscopic tears in bowel, allowing free invasion of the lymph spaces. Once in the vessels the production of fever is rapid, and prostration is prolonged.

Believing that the foregoing is the correct explanation of the phenomena, I have invariably washed out the stomach and intestines with dilute carbolic or boric solution prior to inflation. This process, especially as regards the stomach, renders the observations more uniform in character, as it produces similar conditions of the bowel or stomach, as the case may be, at each examination, while it certainly lessens the chance of causing systemic infection.

I shall now call attention to abdominal cases, intra- and extra-peritoneal, which are of such a character as to be readily passed over as being beyond the reach of surgery, and yet are most speedily and completely relieved by operation :—

Case I.—*Pelvic Peritonitis, with Impaction of Small Intestines in Pelvis; Laparotomy; Recovery.*—E. H., aged twenty-six years, came under my care on September 16th, 1885. She had been treated for constipation for some weeks, and had opiate fomentations over lower abdomen for a sickening pain, felt chiefly at a point an inch or so below umbilicus. This pain was at first colicy, then intermittent, sharp, always referred to the lower abdomen, in which she complained of a sense of weight and fulness. When I saw her for the first time the symptoms were not severe; her pupils were contracted, and I found that she had been kept under the influence of opium for some days. There had been no motion from the bowels for six days, and before that the discharges were scanty, the last containing mucus and blood. Her pulse was irregular, weak, and 110 per minute; temperature, 102·6°. She passed water frequently in small amount—it was high-coloured, and she had, before being narcotised, experienced pain in passing it. The abdomen was tense, tender on pressure at its lower part, which was dull on percussion in the lower umbilical, inguinal, and suprapubic regions, as in Fig. 1. The stomach was dilated and resonant, and both lumbar regions were comparatively resonant.

Fig. 1.



On examining the rectum I found it difficult to pass the index finger beyond the second phalanx, owing to an elastic mass which filled the hollow of the sacrum, and pressed down to the tip of the coccyx. The uterus was so pressed down that the os was within one inch of the vaginal orifice. Bimanual palpation showed that the mass felt in the rectum filled the entire pelvis, and by careful manipulation coils of intestine could be made out. I concluded that a pelvic peritonitis had glued the small intestines together, and fixed the entire mass to the pelvic viscera and walls.

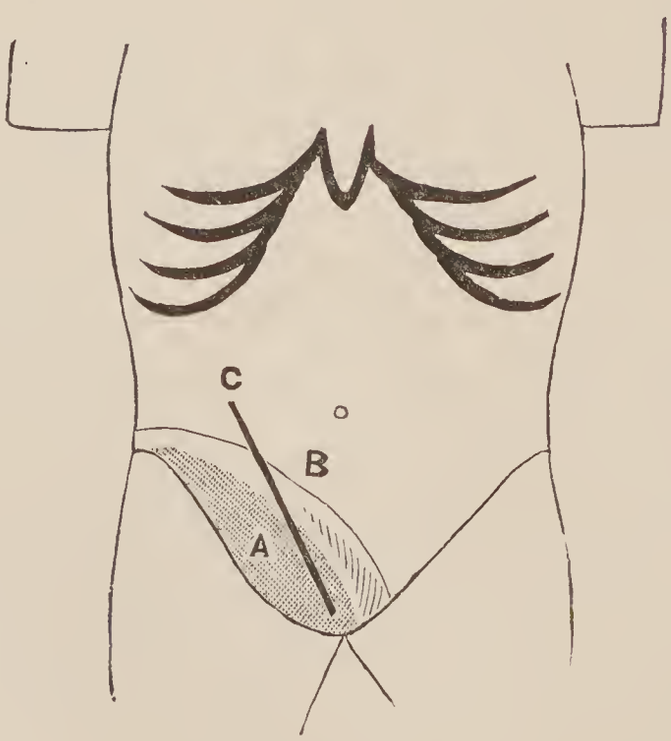
Operation.—After ineffectual efforts to dislodge the intestines by rectal distension, I made an incision in the linea alba one inch above the pubes (B, Fig. 1), and passed my finger deeply into the pelvis, to find that the intestines adhere, and that the post-mesenteric sac is filled with a thin, sour-smelling pus, which escapes through the wound. With a long glass tube, bulbous at the end, and having lateral openings, I washed out the pelvis with warm carbolic solution, half per cent., using at the same time the tube, and later on a sponge held by Wells' pedicle forceps (which I used to mop out the shreds of fibrin and pus) to separate the intestines. I inserted a four-inch celluloid drainage tube with a broad flange, and having a rubber tube attached. The wound was dusted with iodoform, masses of loose gauze were packed round the tube, and over this ordinary dressing perforated for passage of rubber tube, which was closed by a clamp, after exhausting the air by an aspirator. Twice daily the clamp was removed, all the dressings being conducted under the spray, and in the evening of each day 40 ounces of warm carbolic solution, half per cent., containing 10

grains of quinine, were passed into the abdomen, and there retained for 15 minutes, when the fluid was allowed to drain away, which it did, carrying with it for the first few days pus and shreds of fibrin. When the solution returned clear—which it did on the ninth day—these flushings of the pelvis were discontinued, and soon after, the discharge ceasing, the tube was removed, and the wound—now reduced to the size of the tube—dressed with a peat moss pad.

Recovery was rapid and complete. The temperature fell, on the evening of the operation, from 103·8° to 100·5°, and from that it gradually came down to normal.

Case II.—*Perforation of ileum; Resection; Recovery.*—P. R., aged sixteen years, came under my care in the following condition. He was pale and emaciated; face drawn and anxious; pupils dilated; pulse, 120; temperature subnormal; feet and hands cold and clammy; urine normal in amount and appearance; no albumen; tongue coated with white fur; occasional vomiting of bile-stained fluid. He suffered from constipation, and complained of severe pain passing from right groin down thigh as far as knee. Right leg and thigh were greatly wasted. Above the middle of the iliac crest I found a fistula capable of admitting the point of the little finger, and leading into the right iliac fossa. Along this a probe passed readily as far as the edge of the true pelvis. A slight swelling appeared above the outer three-fourths of Poupart's ligament, and backwards to fistulous opening. It was semi-elastic, dull on percussion, and extended towards umbilicus, as in Fig. 2.

Fig. 2.



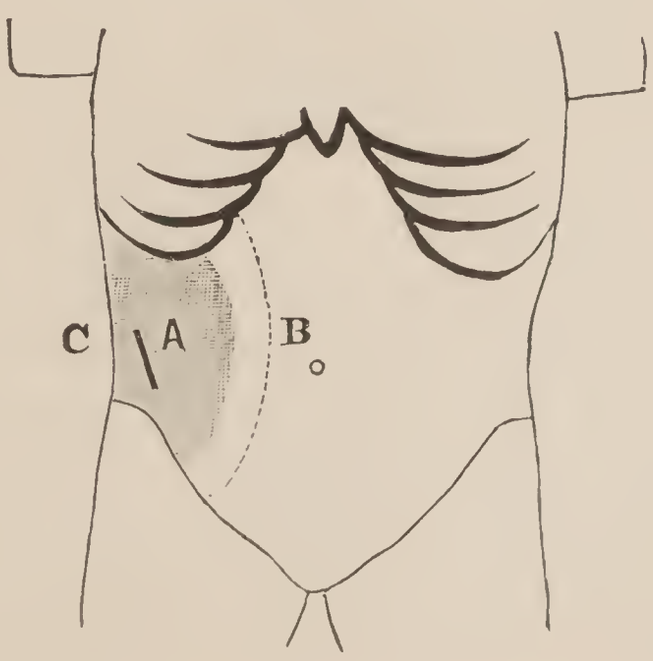
The fistula discharged large amounts of curdy pus, containing all the

solid particles of his food, and having a yellow colour and sour odour. He weighed on admission 6 st. 5 lbs.

On March 10th, 1887, I cut down as represented in diagram, and found the ileum perforated some inches from the ileo-cæcal valve. Removing six inches of the thickened bowel, I sutured the ends after Czerny Leubert's method, and closed the abdominal wound. Some days after operation there was a slight fæcal discharge through wound. On the 6th day the bowels moved, and from that forward the discharge ceased, and the patient made a rapid recovery. He is now a vigorous lad, weighing 9 st. 6 lbs.

Case III.—*Abscess obstructing ascending colon, and causing peritonitis; Operation—Recovery.*—Rev. Mr. D. came under my care on March 15th, 1887, with the following history. Ten years ago had an attack of jaundice, attended with intense pain in the right hypochondrium. Since then he has had frequent attacks of biliousness and intestinal hæmorrhage. Some weeks ago felt pain in right side, and suffered from gastric irritation, then passed blood from the bowels, and had some difficulty in keeping them regular, the evacuation being clay-coloured. In the end of February constipation became marked, vomiting set in, and I found him with a temperature of 103°; pulse, 100; jaundice; furred tongue; urine scanty and deeply stained with bile. On examining the abdomen I discovered a tender area extending from the cartilages of the ninth, tenth, and eleventh ribs, downwards to the crest of the ilium, and inwards to the umbilicus. In the area marked out on diagram, Fig 3, a swelling appeared, dull on percussion, and having a somewhat doughy feel, all over this area pain was constant, the abdomen was distended and tympanitic, his legs were drawn up, breathing shallow, and he found it impossible to obtain rest in any position.

Fig. 3.



For some days I tried the effect of opium and grey powder, using at the same time hot fomentations, but as the symptoms became alarming, and there was an evident spread of peritoneal mischief, I made an incision as in Fig. 3, C, dissected carefully inward to the posterior part of ascending colon, and gave exit to some ounces of pus, dark and fœtid, which lay high up in front of the kidney. I laid in a large drainage tube, and applied antiseptic dressings.

On the twelfth day after this the patient was able to leave his room, and in one month recovery was complete. There was no further pain, only from the bowel, and the constipation yielded to mild laxatives, while the jaundice rapidly disappeared, the evacuations being deeply stained with bile.

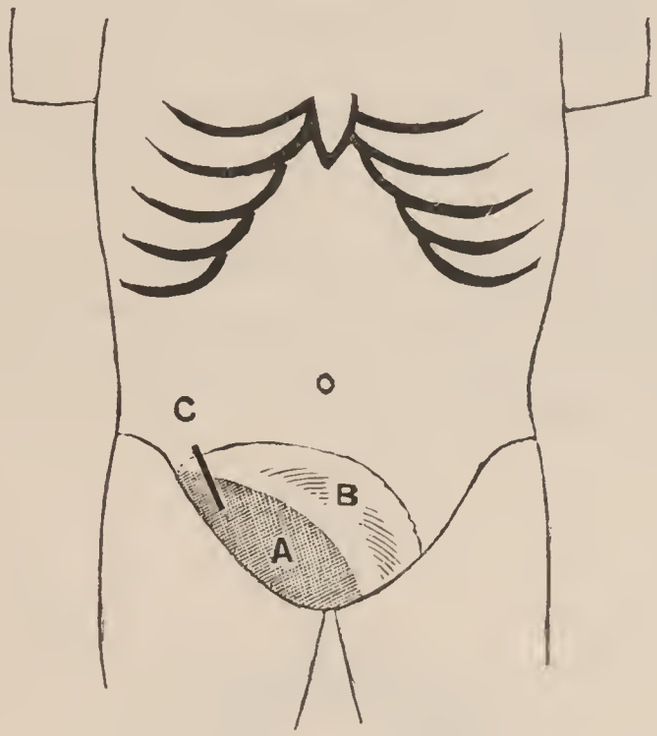
The diagnosis made in this case was that an abscess had formed in front of the right kidney, and that the pressure exercised by the surrounding effusion compressed the descending duodenum, thus causing the vomiting and obstructing the common bile duct, thereby producing jaundice. The hæmorrhage was evidently the result of pressure on the colon, causing a hyperæmic condition of the mucous membrane.

Case IV.—*Pelvic peritonitis from perforation of ileum; Operation; Recovery with fæcal fistula.*—J. C., aged twenty-one years, came under my care on June 9th, 1889, with the following history. For some months he had been unwell, suffering much from repeated attacks of diarrhœa and cramps in lower abdomen, but had been able to go about until ten days before he came under observation, when, after severe pain in the right inguinal region, and down the right thigh, he became faint and was obliged to go to bed; since that time he suffered from severe pain over the area marked B, Fig. 4, occasional fits of vomiting, and great thirst; diarrhœa stopped and urine became thick and high-coloured, depositing urates in large quantities. On examining his abdomen I found the area marked A, Fig. 4, quite dull, and all over it marked fluctuation, while extending to B there was distinct but not complete dulness. All over the abdomen was tender, the legs were drawn up, and he complained of sharp pain down the right thigh. I made an incision one inch to the inner side of the anterior superior spine of the ilium (C, Fig. 4), and after a careful dissection, laid open an abscess which filled the right side of the false, and the greater part of the true, pelvis. I had discovered that the recto-vesical region was filled with fluid, bimanual examination producing a distinct wave from the supra-pubic region to the finger in the rectum.

The patient made a slow recovery, but he is now in good health. He still has a fistula discharging bile-stained, sour-smelling material, evidently from the small intestine, and more than likely from the last coil of the ileum, where it turns over the pelvic brim to join the cæcum.

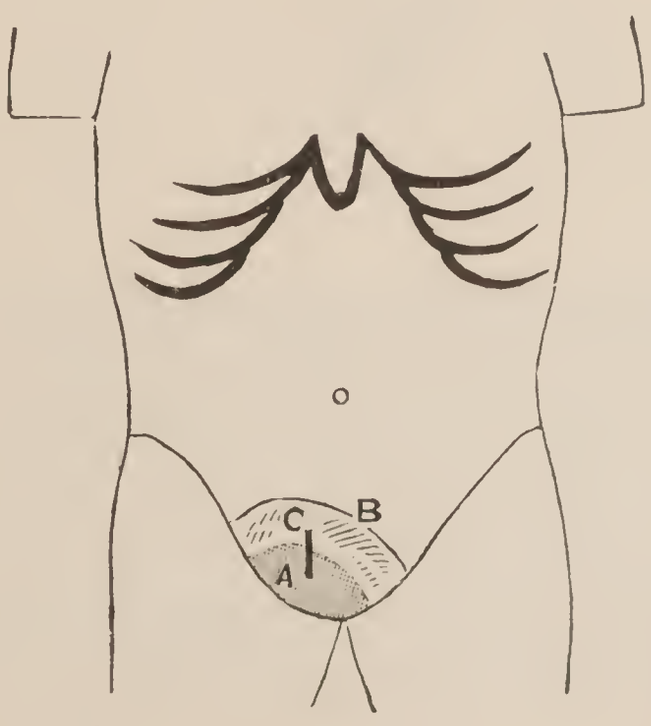
I have seen the ileum perforated on many occasions without extravasation into the peritoneal cavity occurring—(1) where the lower part was not provided with a mesentery; (2) where it ran along the colon for a couple of inches; (3) where adhesive peritonitis had glued the intestines together round the point being perforated.

Fig. 4.



Case V.—*Vesico-cæcal abscess causing peritonitis; Operation; Recovery.*—M. C., aged thirty-nine years, came under my care with retention of urine, for which I was obliged to perform perineal section.

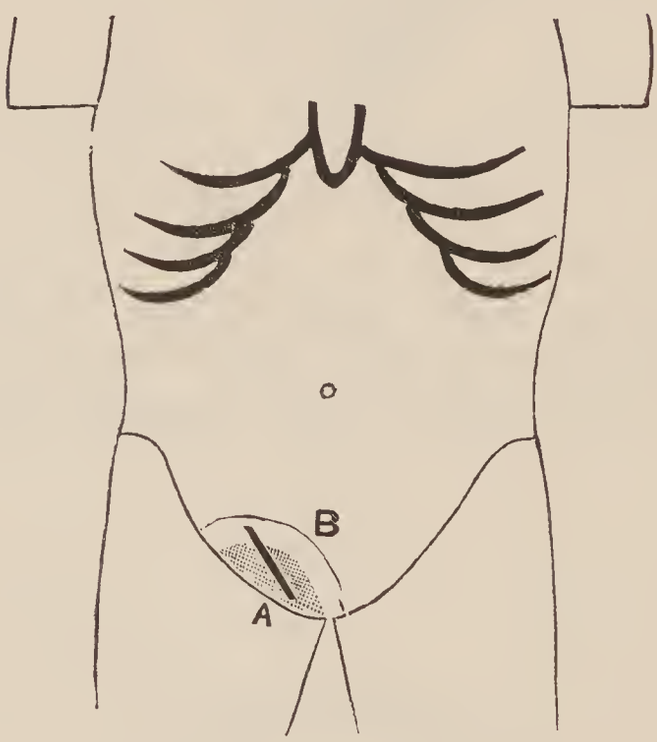
Fig. 5.



The retention was of long standing, and he complained of severe pain in the right side of the abdomen and down the right thigh. This did not subside after evacuating the bladder, and, on examining the suprapubic region, I discovered to the right of the middle line a tender area (A, Fig. 5), dull on percussion, and very painful on deep pressure. Round this was an area of comparative dulness, and also tender. I tried opiates and grey powder, but without effect. His temperature was subnormal; he had cold clammy perspirations, and his breath was fœtid. Rectal examination detected a fluctuating mass projecting from the right pelvic wall inwards between the rectum and bladder. The examination caused great pain. Seeing that palliative treatment was useless I cut down in the direction indicated in the woodcut at C, and gave exit to about an ounce of very fœtid pus.

The improvement was rapid and permanent. In a few days fœtor disappeared, a healthy discharge took place, and soon recovery was complete. It is now four years since the operation, and there has been no retention or other trouble since.

Fig. 6.

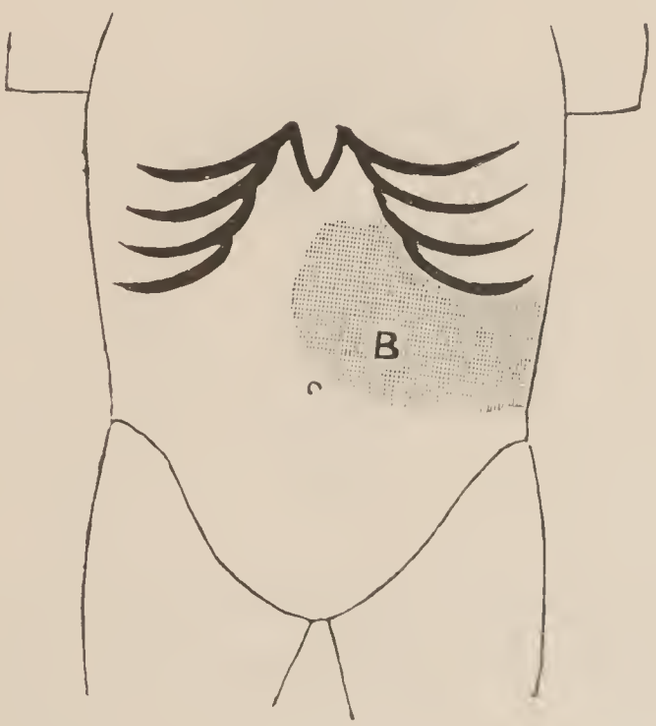


Case VI. *Suppurative Peritonitis following Herniotomy; Re-opening of the Wound; Flushing out Abdomen; Recovery.*—Mr. B., aged fifty-eight years, was operated on for the radical cure of hernia, on the 12th of May, 1889. On the 19th I saw him for the first time, in the following condition:—His pulse was so quick that it could not be counted; temperature in the axilla 97°; body covered with cold clammy perspiration, from which there was a sickening sweetish odour. He was quite unconscious, and had been so for thirty-six hours. The wound seemed healed in its entire length, but, on carefully percussing over the

inguinal and supra-pubic regions, I discovered a circumscribed area of dulness, well represented in Fig. 6, complete in the part shaded, and extending to the line B, where it was only comparative.

I opened up the wound afresh, at A, Fig. 6, passed my finger along the inguinal canal and into the abdomen, and, turning it downwards and inwards to the true pelvis, I gave exit to a large quantity of fœtid, creamy pus. On withdrawing my finger some coils of intestine presented at the wound, and on them some shreds of lymph appeared. These I removed, and, on examining the neighbourhood of the internal ring, which I dilated with my fingers, I found the inverted sac of the hernia lying on the edge of the true pelvis. Slight traction served to remove this, which turned out to be gangrenous. I now washed out the lower abdomen with warm carbolic solution, 1 per cent, laid in a large rubber drainage tube, and applied masses of loose gauze over the wound. This was at 8 p.m. on the 19th. At 3 a.m. on the 20th he became conscious, and from that out gradually improved. In the end of June he had quite recovered from the operation.

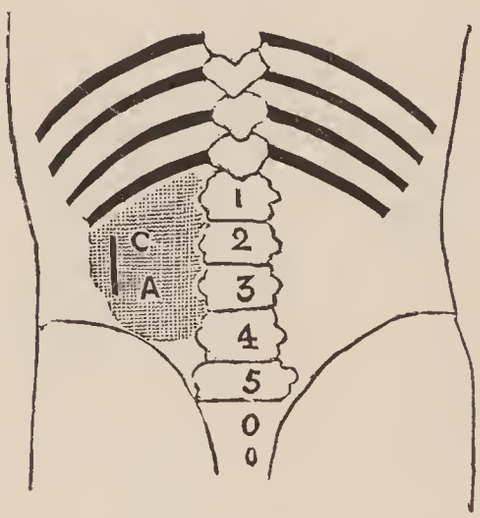
Fig. 7.



Case VII.—*Retro-peritoneal Abscess, causing Obstruction of Transverse Duodenum and Localised Peritonitis ; Operation ; Recovery.*—Miss S., aged twenty years, came under my care in August, 1885. She gave the following history :—Some months ago she complained of darting pains in the region of the ensiform cartilage, great difficulty and pain in swallowing. Later she had difficulty of breathing, which lasted some weeks, and then vomiting set in, each attack being attended with much pain and precordial distress. The patient now commenced to waste, and at the same time wondered that her corset seemed too tight.

For some weeks before I saw her she had had attacks of very severe epigastric pain, followed in some hours after subsidence by a discharge of pus from the bowels. My reading of this case was that an abscess descending along the spine had perforated the duodenum, giving rise in its development to infiltration round the solar plexus, and all the disturbance arising therefrom. There was an indistinct dulness over the area marked B, Fig. 7, and here, also pain and tenderness were felt. In this case I made an incision from the last rib to the crest of ilium (C, Fig. 8), cut through the tissues along the outer border of the quadratus lumborum, and, pressing my fingers inwards in front of left kidney, I came upon a fluctuating mass close along the spine. Into this I passed a director, giving exit to a large quantity of creamy but sour-smelling pus. I washed out the cavity with 1–2,000 corrosive sublimate solution, and laid in a large drainage tube. The dressings were frequently renewed, and the cavity washed out with carbolic solution, and in five weeks from the date of operation the wound was soundly healed. In three days after operation the patient was able to take nourishment freely, and no vomiting occurred from that date, nor did pus pass from the bowels.

Fig. 8.



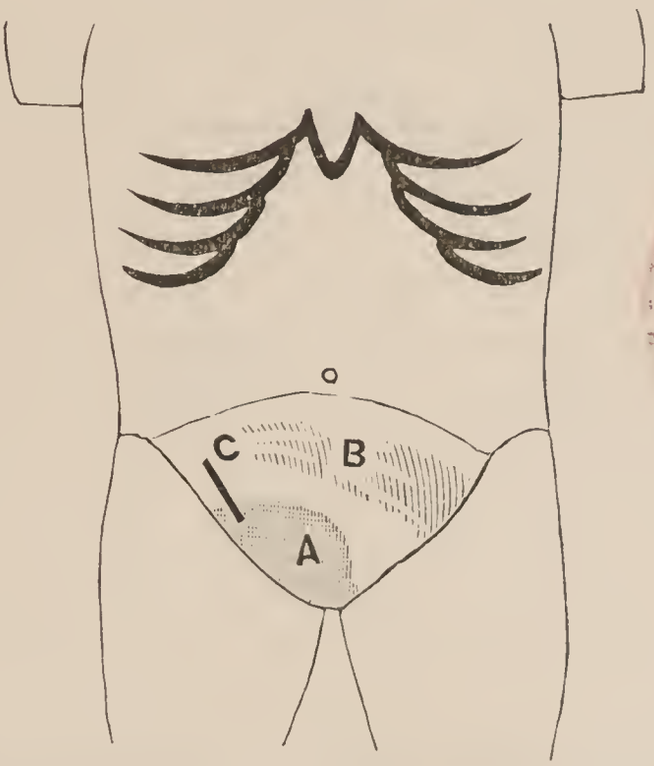
Case VIII.—*Perforation of Vermiform Appendix; Abscess; Peritonitis; Operation; Recovery.*—P. M., aged sixteen years, came under my care on July 13th, 1889. He had been kicked repeatedly in the lower abdomen some week or ten days before, and from that time there had been no action of the bowels until the morning I saw him, when he complained of very severe pain in the right side of the abdomen, in the part marked A in Fig. 9; here also was there dulness on percussion and tenderness. He also complained of an intermittent twisting pain at umbilicus and some tenesmus; temp. 103·6°, pulse 120. On examining the rectum I discovered a fluctuating mass bulging into the right side thereof, and I could detect a wave by percussing the abdomen with the left hand.

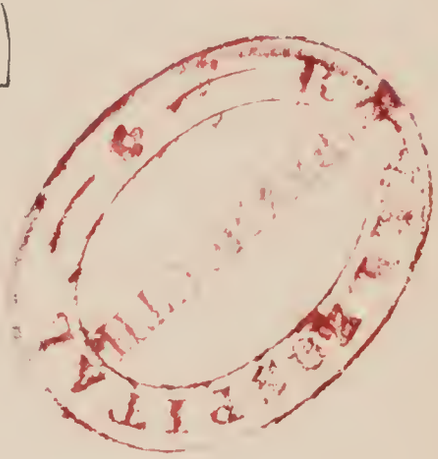
I laid open the abscess in the line C, Fig. 9 near the anterior superior

iliac spine, giving exit to a large quantity of rather thin fæculent matter, and found therein an olivary calculus, which, on section, proved to be of slow growth, there being numerous concentric layers of firm material in it.

Irrigation with one per cent. of carbolic solution was carried out in this case, and in twelve days after operation discharge had practically ceased, and in one month the lad was in fair health.

Fig. 9.



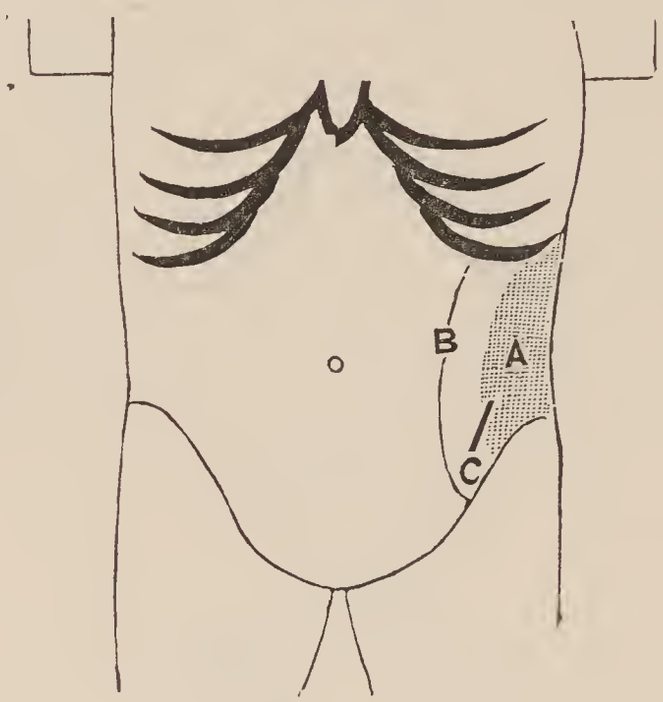


Case IX.—*Abscess obstructing Descending Colon and causing Peritonitis; Evacuation; Recovery.*—L. M., aged twenty-one years, came under my care on April 2nd, 1887. He had suffered from frequent micturition at first, then constipation, with occasional attacks of hæmorrhage from the bowels. On examination I discovered a deep-seated swelling in the left side; there was tenderness and pain all over the region marked in Fig. 10, while in the shaded part shown in the figure there was marked dulness in percussion. He complained of a pain shooting up to the left scapula and down the front of the left thigh. He was greatly emaciated, and of late the constipation was very persistent. His temperature never went below 102°, and he had shiverings very often.

I incised the abdominal wall, as marked in Fig. 10, and, pushing the bowel forward, I reached, close to the left side of the lumbar spine, a fluctuating mass, which I freely opened, giving exit to about four ounces of fœtid pus. I dusted the parts well with iodoform, and laid in a large drainage tube, dressing the wound with peat moss pads, saturated with corrosive sublimate, the wound round the drainage tube being plugged with iodoform gauze. For ten days the case went on very satisfactorily, but it was noticed that the discharge was more copious than ordinary at

this time, notwithstanding frequent washings of the abscess cavity with corrosive sublimate solution; and when I came to examine the case for the first time since operation I discovered at the bottom of the abscess cavity a rounded mass of iodoform gauze saturated with pus. The removal of this, and a continuation of irrigation, resulted in rapid recovery, which, I am glad to say, has been permanent. I saw the patient some days since in perfect health.

Fig. 10.



The foregoing are cases which, if allowed to take their own course, would, I have no doubt, end fatally, although in some of them, as Cases III. and IX., such a result might be delayed indefinitely, the interval being one of misery to the patient owing to the pain and discomfort attendant on discharge of fæcal or purulent material.

What these cases teach is, that, with accurate and early diagnosis, diseases which usually run a long and hopeless course may be brought to a happy and hasty ending.

In all of them I have made the opening free, and no matter at what trouble I have always removed all solid or semi-solid material which could in any way delay granulation or retard free drainage.

There is nothing in my mind so fatal to surgical progress as the tendency I have noticed to proceed by over-cautious steps in the emptying of such collections of pus as those I have noted.

The passage of fine drainage tubes, puncture with trocar, aspiration, &c., are very well in their way, but they are not the methods suggested by modern surgical science, nor can they be defended, in the face of their tediousness and very frequent failure. I read

and hear that aspiration allows a patient's strength to improve, so that later a more vigorous method may be adopted with safety. I say, detect the disease before prostration occurs, and your patient will be in a better position to bear an operation than after he has run the gauntlet of inflammatory fever, often diffuse suppuration, and frequently hectic fever. Then, again, it is said in circumscribed peritoneal collections aspirate to allow the abscess wall to develop. Now this is sheer nonsense. The wall of such circumscribed abscesses is not a simple mass of dense tissue shutting off the pus from the general peritoneal cavity. Whoever examines this wall will find it teeming with micro-organisms of the most virulent character, and we are told, forsooth, that these colonies must be allowed to develop and extend so as to shut off the pus from the peritoneal cavity. I say, why not remove the pus at once, so that no such extension can occur, and at the same time expose the germs to the influence of some antiseptic, so that—(1) no re-formation of pus can take place; (2) proliferation may be checked, and (3) general infection may be prevented.

Passing now from the consideration of these cases in their general aspect, let me direct attention more particularly to Cases IV. and VI. In them I find, by a reference to the charts, that before the onset of septic absorption the temperature was usually high, while then a fall occurred, and from this time no appreciable rise ever took place. Now this is a point which I desire to emphasise most forcibly, for the simple reason that I have over and over again seen the descent of temperature pointed out as evidence of improvement. How sadly have the hopes thus raised been dashed, many a family can testify. Another point deserving of consideration is the absence of rigors in a large percentage of these cases, even when suppuration is very extensive, the smallest collection of pus in the cellular tissue will often give rise to more marked rigors than many ounces of the same material in the peritoneum, indeed I have frequently seen pus in large quantity in the peritoneal cavity without the temperature being materially influenced by its presence. I believe that the aspect of the patient, the peculiar, sickly, sweet odour of the breath, and the intermittent clammy perspiration, with occasional attacks of syncope, alternating with hurried breathing, must be taken as our guides in the prognosis of abdominal lesions.

Many a time have I regretted delay in opening the abdomen when influenced by a descent of temperature, I have hoped for

recovery, while I have never yet had reason to regard a laparotomy of mine, for the washing out of the peritoneum, as anything but the most beneficial of procedures. A serious operation, requiring prolonged anæsthesia, is never necessary. An opening large enough to admit one finger and a long celluloid tube are all that is demanded, and when we confine ourselves to this it is hardly necessary to produce complete anæsthesia at all, as there is little or no pain experienced once the skin-wound is made, and when the patient is in the semi-unconscious state which precedes septic intoxication, the laparotomy wound only acts as a stimulant, as does also the flushing out of the abdomen with warm solutions. It is marvellous what a change takes place immediately after the removal of septic fluids from the peritoneum; the aspect, skin, and tongue first show the change, then the temperature, which is often subnormal, goes up, consciousness returns, and if the dose already absorbed be not too great, or the patient's strength be not too far gone, recovery takes place with wonderful rapidity.

Art. XII.—*Unusual Case of Thyroid Tumour—Operation—Recovery.*[a] By Anthony H. Corley, M.D.

The case which I submit to the notice of the Royal Academy of Medicine is one which, with respect to history, diagnosis, treatment, and result, presents features worthy of discussion.

On the 16th of February last Dr. Byrne, of Derry, wrote to obtain my opinion on a case of tumour of the neck, which he had been attending, in consultation with Dr. M'Laughlin, of that city. The patient was sixty-two years of age; and the lump had been growing for nearly thirty years. For the last two years its rate of increase had been unusually rapid, and it had begun to interfere with his respiration and his voice. Dr. Byrne had, in view of these threatened dangers, recommended puncture and aspiration, for exploration as well as for relief. This procedure was adopted early in February, 1888, and about eight ounces of fluid were drawn off. The size of the tumour was reduced, but in a few days it was as large as before. The fluid evacuated was sherry-coloured, and separated, on standing, into a floating jelly-like clot and a subjacent serum. The circumference of the neck before aspiration

[a] Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, March 29, 1889.

was 24 inches, and, after the operation, 22½ inches. No microscopic examination was made. Before giving any decided opinion as to the nature or treatment of the case, I asked Dr. Byrne to send me some photographs, and these I received in a few days, together with answers to several queries which I forwarded. The photographs were most instructive, especially when taken in connection with the able descriptive letter which accompanied them.

The carotids could be felt beating well up on the mastoid process of the temporal bone. From the patient's own description, Dr. Byrne was of opinion that the tumour had commenced in the sub-maxillary triangle of the neck.

In giving such consideration to the case, assisted by the history and photographs, I formed the opinion, subject to subsequent modification, that the tumour was cystic, non-malignant, dangerous by mechanical pressure alone, as evidenced by the pushing aside of the principal anatomical structures of the neck, and, probably, amenable to treatment by operation.

I saw him first on the 3rd of March, and my opinion as to the necessity for, and feasibility of, operation was confirmed—a view in which Dr. Thompson, of Omagh, who saw the patient with me, fully coincided.

Accordingly, he was admitted into the Richmond Hospital on the 14th of May. He is described in the Case-book by Mr. Nash, our able House Surgeon, to whom I am indebted for these notes, as "a small, but healthy, energetic man, of temperate habits and regular life, but with a permanently intermittent pulse. He believed that the tumour had been rapidly increasing for some time, especially so for the last five months. Tumour somewhat pyriform in shape; broad end below, extending to episternal notch; skin freely movable over it, allowing very large and tortuous veins to be seen on surface; on palpation there was a feeling of deep fluctuation."

From information which I received from the patient, I was of opinion that he had unintentionally misled Drs. Byrne and M'Laughlin as to the site from which the tumour had originally sprung. This, as it may be remembered, was the region of the sub-maxillary triangle. On taxing his memory, he recollected the origin was lower down, at the left side of the trachea, and that, for some time after its appearance, he was able to conceal it by wearing a high shirt-collar.

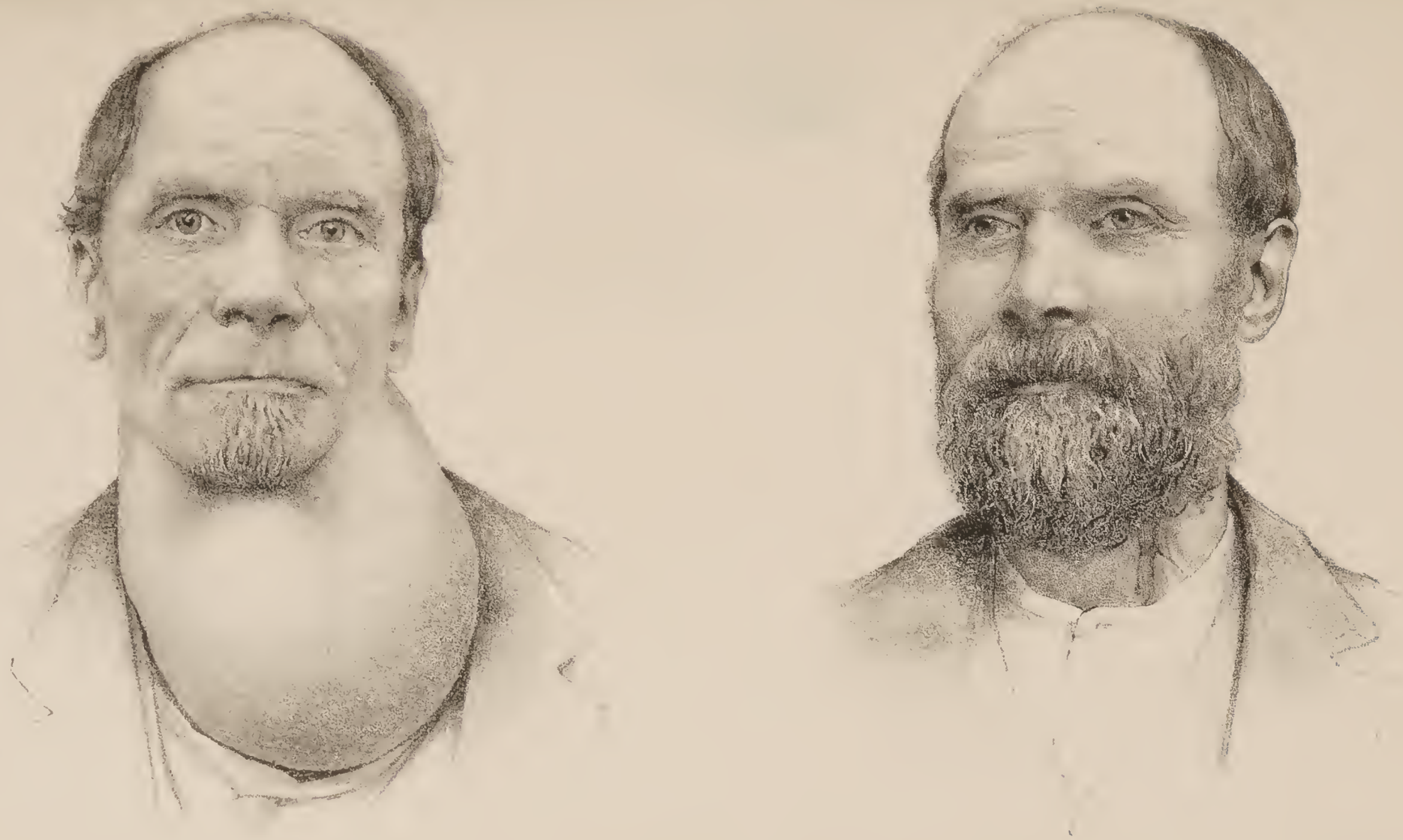
I was nearly satisfied in my own mind that I had a bronchocele to deal with, possibly cystic, but so uniform in feeling and contour that no distinct cavities could be diagnosticated. There was nothing very reassuring in this conclusion.

I have had a tolerably large experience of thyroid operations, chiefly as assistant, and the prospect of removing the gland from a man of sixty-two, with an intermittent pulse, was not an inviting one. However, I had two considerations to help me—first, that the tumour was, undoubtedly, strangling the patient; and next, that he was a man of the most genuine "pluck" I had ever met. Every possible danger connected with the operation, including that of death, was explained to him, but his invariable comment was—"I know it's going to kill me; I came up to have it done, and I'll take all the risks, if you do it." He is so well known and liked in his native town that Drs. Byrne and M'Laughlin, his own medical attendants, came up to be with him in his hour of trial.

In their presence, on the 24th of May, ably assisted by my colleagues, I performed the operation.

A vertical incision through the skin, a little to the left of the mesial line, and one transversely from the middle of that, sufficiently exposed the tumour. Layer after layer of covering was divided, till the capsule came into view; and rapid enucleation with the finger and director was proceeded with. Some large veins required ligature, also one large artery towards the left maxillary portion of the tumour. By degrees the whole mass was separated from all connected structures, and the last vascular attachments were ligatured and severed. The larynx and trachea returned almost to their normal position. The œsophagus had not been pushed aside, but occupied its usual site. The left superior laryngeal nerve was completely exposed, and part of its external branch divided.

Up to this the bleeding had been of no account; but a most dangerous-looking chasm, overhung by wrinkled flaps of skin, with bare trachea, œsophagus, sheaths of vessels and vertebral column at its bottom, indicated the bed of the tumour. So far, everything went well, and the operation had not lasted more than half an hour. The incisions were carefully sutured, and the patient allowed to get from under the influence of the anæsthetic. Just as I was about to give directions to have him removed to his bed, a sudden, most alarming gush of hæmorrhage took place; the



F. Huth, Lith^r Edin^r

M^r Anthony H. Corley's case of Enlarged Thyroid Gland, from photo's taken immediately before and six months after operation.

blood welled up in dark streams between all the points of suture; the patient's face blanching, and his pulse becoming feeble.

Immediately the sutures were cut, the wound opened, and sponges pressed in to give time for the application of ligatures. This, however, was no easy matter. Although the chief gush issued from the upper end of the wound, there seemed a general flow from its whole length. A bleeding-point above was seized and ligatured, but the welling still continued, and only diminished when the patient fainted.

On consultation, we determined that plugging and pressure were the only feasible means of dealing with the hæmorrhage.

Lining the wound with a layer of alembroth gauze, I packed that with iodoform cotton, fixed with a large pad and lightly-applied bandage. In three hours there was some recurrence of the bleeding, but digital pressure restrained it. This hæmorrhage, and its necessary treatment, complicated the operation very much. It precluded anything like immediate union of the wound, and, of necessity, produced suppuration, with all its attendant dangers. For three or four days he remained tolerably quiet, drinking milk and beef-tea with difficulty, and having his strength supported by nutrient enemata and zyminised suppositories.

On the ninth day after the operation restless delirium set in, which continued for twelve days. There was a strong disposition to leave his bed; sometimes to get out of the window; and, at all times, a wish to return to Derry. The plugging was not taken out until the sides of the cavity began to granulate—even then the pulsation of the carotid could be seen at its bottom; and, with this condition, his restless movements and turnings of the head made his appearance almost appalling.

On the twenty-eighth day after operation two abscesses appeared—one on the radial side of the forearm, and the other on the gluteal region. These were opened, and, after the evacuation of healthy pus, they healed up.

On the twentieth day I endeavoured to promote secondary union, and preserve the wound from injury, during the delirium, by passing deeply a couple of hair-lip pins, and bringing the parts together by a figure-of-eight suture.

For a week before his departure from hospital he had returned to his right mind, and was slowly gaining strength; but he displayed such a constant anxiety to go back to his home, that, before the wound was healed, I allowed him to leave hospital, which he

did on the 29th of June, thirty-six days after the operation. I had less hesitation in this—first, because I knew it would tranquillise his mind; and next, because his own surgeons could meet any possible complications during convalescence.

The healing of the wound was slow; and, considering that suppuration had been fairly copious all the time, it is not surprising that the deep ligatures came out one by one at intervals—and this still further delayed the healing.

Immediately after the operation we perceived a certain amount of aphonia; this remained unaltered, and is still present. The struggle which he passed through before he left the hospital is shown by a photograph, taken on the thirtieth day.

He is now in perfect health in mind and body, as is conclusively shown by his presence before the Academy, but I cannot say that his case will either tend to throw additional light upon, or involve in fresh mystery, the functions of the thyroid gland.

As to the nature of the tumour I have macroscopic and microscopic evidence. It weighed 4 lb. 4 oz. shortly after removal; but anything more dissimilar to a thyroid gland cannot be imagined, or more unlike the shape, when *in situ*. Light in colour, firm to touch, and shaped like a small apple-dumpling, it could scarcely be recognised as the pear-shaped tumour. My colleague, Dr. Scott, made the microscopic sections, which are before you. It was not a cystic goître, as there were no large cavities in any part of it—it was a simple enlargement of the thyroid gland; and Dr. Scott remarked that if he wished to exhibit sections of the normal gland to his class, he could not have selected better than the specimens before you.

One word more. I cannot sufficiently thank Drs. Byrne and M'Laughlin for their care of this patient, and for the interest they took in the consideration of operative interference, and in assisting to bring the case to a satisfactory conclusion.

I was in hopes that this case would be a contribution to the vexed and important question of cachexia strumipriva. This curious disease (first recognised by Gull as the cretinism of adults; named by Ord, myxœdema; proved by Reverdin and Kocher to have a direct connection with the removal of the thyroid gland—proofs confirmed experimentally by Horsley) was before my mind from the date of the operation until very recently. The character of the tumour, its position, its completeness, size, and want of connections, made me believe that I had removed the entire gland.

The cerebral symptoms following confirmed this view; and one of my colleagues attributed them altogether to altered functions depending on that removal.

I awaited anxiously, and received report after report as to his condition, and was equally pleased and interested at hearing there was complete restoration to health, without a trace of myxœdema. Shortly after he returned to Derry a small soft lump appeared at the upper part of the trachea, apparently enveloping it. I had the opportunity of examining him last night, and again to-day, with my colleagues. I am of opinion that the lump is formed by the isthmus; that the right lobe still remains; and that the tumour removed was the hypertrophied left lobe, which had, in its growth, produced an atrophy of the other structures of the gland. My explanation of this is as follows:—As the left lobe grew, and pushed the larynx up to its position, the left side of the isthmus was gradually drawn out into a band of fibro-areolar tissue, which, without attracting any notice, was divided in the operation. With the removal of the pressure, and the convalescence of the patient, the isthmus and the right lobe have resumed their normal size, and their presence explains the absence of consecutive constitutional disease.

ART. XIII.—*Note on the Treatment of Tinea Tonsurans.* By H. S. PURDON, M.D., L.R.C.S.I.; Surgeon, Belfast Hospital for Diseases of the Skin, &c.

THE *British Journal of Dermatology* for August, 1889, contains a paper on the treatment of tinea tonsurans, in which are given the various therapeutic methods adopted by the leading dermatologists of Great Britain for the cure of "ringworm."

Whether tinea tonsurans is always due to the presence of a fungus, or when existing—*i.e.*, the fungus—is to be looked on as an accidental complication, is really a difficult question to solve. No doubt there must certainly be a suitable soil for its growth, otherwise "ringworm" would be much more frequent, especially in public schools. There is one peculiarity in "ringworm" of the scalp worth noticing, and that is this—no matter by what method we treat the disease locally, even with the newest and most approved of plans, the "ringworm" generally runs a definite course, which may be compared to that of a fever. No cutting it short, if it be a genuine attack of tinea tonsurans—as shown by microscopic

examination of the hairs. The course of the disease varies greatly according to the constitution of the patient; much more tedious in fair-haired children than in others. If we examine the various prescriptions contained in the *Journal of Dermatology* for August, 1889, as being the usual treatment of five leading physicians whose names are appended to same, we will observe that, in addition to a *parasiticide*, each application, I may safely say, contains in addition an *irritant*—either sulphur, white precipitate of mercury, chrysophanic acid, creasote, or salicylic acid; whilst in the same journal for April we have a brief extract from Dr. Harrison's valuable paper on tinea (*Brit. Med. Journ.*). Both of the ointments recommended by him contain irritants—in one case carbolic acid; in the other, oil of cloves.

How does nature "cure" ringworm of the scalp, or of the beard in adults? By producing in the former tinea kerion, in the latter suppuration of the hair follicles, called by the name of sycosis.

Hence, taking the hint thus obtained, I have for a considerable time held the opinion that an irritant application, combined with a parasiticide, must be used. Moreover, one that will penetrate to the root of the disease and can be kept in contact is necessary. Consequently, for many months I have used at the Belfast Hospital for the Skin an ethereal tincture of croton seeds containing salicylic acid as a parasiticide. The croton tincture acts the part of an irritant, allowing the salicylic acid to get full scope; the ether promotes absorption, and dissolves any fat, whilst the gum mastic contained in the tincture creates a varnish like film, excluding the air from the diseased patch, preventing suppuration, and thus lessening the risk of obliteration of hair follicles. Moreover, the remedy is kept longer in contact with the disease. The results have, so far, been excellent, a few applications only being necessary.

In conclusion, I may say, whilst the local treatment is all important, that, as far as my experience goes, arsenic and iron seem often to be necessary, so as to quickly remove disease and prevent danger of a relapse.

Since writing the above a valuable paper on "The Artificial Cultivation of Ringworm Fungus," by Dr. Leslie Roberts, has appeared (*Journal of Dermatology*, Sept., 1889). The author holds that the fungus of ringworm is able to vary its form and activity according to the physical and chemical properties of the soil in which it grows. The proper "aliment" of trichophyton is glucose, and not a proteid or nitrogenous body, as was formerly thought.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Bronchi and Pulmonary Blood-vessels. By William Ewart, M.D. Cantab.; F.R.C.P. London: J. & A. Churchill. 1889. 8vo. Pp. 232.

In this work—the record of a research upon the anatomy of the lung—Dr. Ewart has filled a distinct anatomical gap. Although both ends of the bronchial system had been most carefully worked out—the trachea and its larger branches on the one hand, and the histological structure of the pulmonary parenchyma on the other—still there lay between the two a tract which, before Dr. Ewart's research, had not been thoroughly explored by any investigator; and the accounts of those who had entered the region were so obscure and contradictory, that they were of little practical use. In a series of injections made with fusible metal, carried out with the greatest care, and by numerous dissections and preparations—the result of marvellous perseverance and great skill—Dr. Ewart has penetrated this virtually unknown land, and he gives us in his book a complete and perfect account of the anatomy, the structure, shape, and relations of the parts found there.

Dr. Ewart seems to have had in view in his investigation chiefly two objects—first, to find out and record accurately the exact arrangement of the parts of the lung between the root and periphery, special regard being paid to the bronchial distribution, and secondly, to examine and criticise certain facts and theories advanced by the late distinguished German anatomist, Professor Aeby, in his book on the "Bronchial Tree."[a]

The initial difficulty met with in this undertaking was the want of a proper nomenclature, for previously there had been no sound principle of naming the divisions of the bronchi and their ramifications, for the limited nomenclature of Aeby has been shown by Dr. Ewart to be inaccurate, as well as incomplete. To get over this difficulty a nomenclature had to be invented, and it was

[a] Der Bronchialbaum der Säugethiere und des Menschen. Leipzig. 1880.

necessary that it should be at the same time anatomically correct, and not too confusing.

The principle of the system proposed by Dr. Ewart is admirable; it is accurate and simple in its main features; but any nomenclature, however simple, must become more or less intricate when bronchi are followed and named to their eight or tenth bifurcation. His plan is this—he divides the lung into a number of regions well defined by the large primary bronchi, one of which supplies each, and he names the regions according to some well-marked anatomical relations of the parts. It will be easiest to explain this system by giving the principal regions into which he divides the lung: each primary bronchus—that is, each bronchus coming off directly from what Aeby called "the bronchial stem" within the root zone—supplies and maps out a region which Dr. Ewart calls a distribution. Thus, in the right lung there is an upper lobe supplied by the upper lobar bronchus (this lobe is easily further subdivided into a pectoral distribution in front, related to the anterior chest-wall; an axillary distribution related to the axilla, and an apical distribution above, which includes the apex; each of these smaller distributions is supplied by one corresponding secondary bronchus springing from the upper lobar trunk). Next comes the middle lobe, called by Dr. Ewart, from its relation to the heart, the cardiac lobe or distribution; it is supplied by the middle lobar or cardiac bronchus. The lower lobe is divided into four large and two somewhat smaller distributions. The larger are three basal distributions—one occupying the anterior portion of the base, the second the axillary, and the third the posterior region of the base; they are called respectively the anterior, axillary, and posterior basic distributions, supplied by bronchi bearing the same names. The fourth larger distribution is the posterior horizontal, comprising the upper portion of the lower lobe, behind the oblique fissure; it is supplied by a large bronchus which runs horizontally backwards—the posterior horizontal. The two smaller distributions are the retro-cardiac on the posterior two-thirds of the inner surface, and the lesser posterior horizonital at the posterior surface, on a lower level than the posterior horizontal. Exactly the same distributions are found in the left lung, as will be more easily understood when the branching of the bronchi and Dr. Ewart's ideas on the homology of the lobes are described. The subdivisions of these large bronchi are named upon the same principle, and by a new system of notation.

Dr. Ewart shows in his diagrams of the various distributions, not

only the name of the tube indicated, but the number of bifurcations which it is away from the parent stem, as well as every change in direction which the bronchus it springs from undergoes between the parent stem and the tube in question.

Although this nomenclature of Dr. Ewart is built upon such a sound system, and although it is, we believe, the best that could be devised for such a difficult subject, still it will be easily understood that when bronchi are followed, described, and named to the tenth division, the nomenclature must naturally become somewhat intricate, and extremely technical, so that few ordinary readers will be able to afford time to follow the full description of the parts as given by Dr. Ewart. Consequently, we think, it will be more useful and more interesting to give a brief account of Dr. Ewart's work—his new facts and theories, and his opinions regarding the theories of others—than to criticise his book, upon which the greatest praise must be bestowed, not only on account of the important matter contained in it, but also for the method in which that matter is placed before the reader. To accomplish this end it will be necessary to make this article perhaps unbecomingly long, still we feel that if such a synopsis be not written by someone who has read the work carefully, many will be deprived of the advantage of becoming acquainted with the many important facts and views contained in it.

We must first refer for a moment to the accepted descriptions of the lung, *so far as they are connected with Dr. Ewart's work.* We shall find two different accounts, which we may call the old view—accepted before Professor Aeby's work on the subject appeared—and the later view adopted by most of our modern text-books from Professor Aeby's work.

According to the old view the right lung is composed of three lobes—upper, middle, and lower; the left, of two—upper and lower. With regard to the homologies of the lobes, no very strong opinions have been expressed, but the names suggest that the two upper lobes are homologues, and that the two lower also correspond. The trachea was described as bifurcating at the level of the fourth dorsal vertebra into the two bronchi—a right shorter, wider, and more horizontal, and a left longer, narrower, and more oblique—each of which ran downwards and outwards to the corresponding lung. On the left side, according to the old view, the main bronchus divides into an upper and a lower lobar bronchus, while the right main bronchus divides into an upper lobar bronchus and

a part which afterwards breaks up into a middle and a lower lobar bronchus: the further subdivisions and ramifications of the bronchi are brought about by dichotomous branching—*i.e.*, at a branching a bronchus divides into two parts, each of which, as a rule, diverges somewhat from the direction of the parent trunk. With regard to the pulmonary blood-vessels, it was taught that a branch of the pulmonary artery and a branch of the pulmonary vein accompany closely every branch of the bronchus, and that they divide with it, so that a description of the branching of the bronchi is a description of the branching of the vessels. It was taught by some (Cruveilhier, &c.), that the vein might, *for a time*, be separated from the other two, particularly near the periphery. A definite relation of the artery and vein to the bronchus was also usually given—the artery above and in front of the bronchus, the vein below. Cruveilhier taught that the artery was behind.

The later view is derived chiefly from Professor Aeby's work. He, after an exhaustive investigation of the branching of the chief bronchi throughout the animal series and in man, propounded the theory that the branching of the bronchi was not dichotomous, but that, on the contrary, the system was one of monopodic branching from an axial stem. He taught that there is a main bronchial stem for the supply of each lung; this stem runs downwards in an axial form from the root towards the base, not centrally placed, and this stem gives off a series of four ventral (anterior) and four dorsal (posterior) branches, which are distributed to the anterior and posterior parts of the lung respectively. In addition to these four dorsal and four ventral branches, he described, in the right lung, a large branch coming off from the bronchial stem an inch from its beginning for the supply of the upper lobe. The right pulmonary artery, in passing into the lung, crosses the bronchial stem below the origin of this upper lobar bronchus; all the other bronchi arise below the point at which the artery crosses. Consequently Aeby divided the bronchi into eparterial and hyparterial—in the left lung all bronchi are hyparterial, in the right lung all except one, the upper lobar bronchus. Besides these Aeby gave to some bronchi, which would not fall easily under the heading of either ventral or dorsal, the name of accessory bronchi, assigning to them a secondary place, although some of them are primary branches of the main stem.

Another point upon which Professor Aeby has advanced a new theory is the morphology of the lobes of the two lungs. He has

advanced the view that the two lungs are entirely unsymmetrical in man. The right lung has three lobes, the left two; the right lung has an eparterial bronchus for its upper lobe, the left has none; the bronchi of the right lung are arranged in an eparterial and a hyparterial set, those of the left are not. Upon these and other considerations he taught that the left lung is dwarfed, and that one of its parts is absent—namely, its upper lobe. The lower lobes of the two lungs are homologous, the middle lobe of the right is homologous with the upper lobe of the left, and the upper lobe of the right lung has no representative on the left side. He bases this theory of the morphology of the lobes chiefly upon the two facts that the right upper lobe is supplied by an eparterial bronchus, no corresponding bronchus existing on the left side, and consequently no corresponding part of the lung, and that the middle lobe of the right and the upper lobe of the left have a similar bronchial supply—namely, the first ventral hyparterial.

With regard to the relations of the blood-vessels to the bronchi, the idea carried away by anyone reading the later views upon the subject—as in the last edition of Quain's Anatomy—would be, we think, that beyond the root of the lung the artery crosses over the bronchial stem, and runs down behind it (Aeby's diagram, given in Quain, leads decidedly to this conclusion), and that the vein remains in front. Further, this authority definitely states that in the subsequent ramifications throughout the lung the artery will be found behind, the vein in front of the bronchus. All the later descriptions of the main bronchi, since Aeby's time, correct the old account, and now it is universally taught that the left bronchus is the more horizontal of the two, not the right, as we read of in the older books.

These are, we consider, the chief points in the old and the later views upon which Dr. Ewart's investigations bear, and they may be grouped under the following heads :—

(1.) The mode of branching of the bronchi—monopodic, with an axial stem, or dichotomous.

(2.) Homology of the lobes.

(3.) Division of bronchi into eparterial and hyparterial.

(4.) Relations of blood-vessels.

Under the first heading Dr. Ewart's investigations show distinctly that the system of ramification in man is dichotomous. He says "all bronchi are dichotomous," and he explains that dichotomy is the division of one trunk into two, both of which depart more or

less from the original direction of the parent trunk. The two resulting branches may be of equal size, or they may be unequal; in the former case the dichotomy is said to be even, in the latter uneven. At the root of the lung, and near it, uneven dichotomy is the rule; at the periphery it is almost invariably even. But uneven dichotomy is no evidence against dichotomy, which always exists in this sense that never more than two branches arise from any one division.

Professor Aeby founded his theory of the bronchial axial stem, with branches coming off ventrally and dorsally from it, upon the result of an extended research into the bronchial system of mammals generally, and he then applied the theory to the lung of man, distorting *his* bronchial system when necessary to make it conform to the lower type. But Dr. Ewart points out that the difference in this system between man and animals arises altogether from the difference in form, and consequently in requirements, in the lungs of the two classes. Man is one class—in him the lungs, like the thorax, are short and deep (antero-posteriorly), while in most other animals the thorax and lungs are long and narrow. In man, owing to the shortness of the lung, the bronchus which supplies it very soon breaks up into a number of more or less radially-disposed branches, which undergo repeated dichotomous bifurcation on their way to the periphery, and thus there is early lost in the human lung all trace of a bronchial axial stem—"it is lost below the level of the upper third of the lower lobe." In animals, on the other hand, owing to the length and narrowness of the lungs, this arrangement—an early breaking up of the main bronchus—would not be suitable, for the chief objects to be fulfilled by the bronchial tree are to bring the air to the district of aeration with the greatest directness and rapidity, and with the least possible friction. These conditions are best carried out in animals with long narrow lungs, by postponing the breaking up of the bronchus for a considerable time, in order that the air may be carried direct to the distal parts by a large trunk, which will give rise to little friction during the passage of the air through them. But as the proximate parts must not be deprived of their proper air-supply, this large trunk gives off along its course, by dichotomous division, several branches for them, so that the whole presents somewhat the appearance of an axial stem giving off trunks by monopodic branching for the regions through which it passes. But, as Dr. Ewart points out, this is simply the result of the adaptation of

the bronchial system to the shape of the lung, not the expression of a fundamental law of development.

Then, without doubt, dichotomy is the system according to which branching takes place, the dichotomy being generally even in the peripheral, uneven in the central tubes; and this unevenness is again the result of adaptation, for a system of even dichotomy could never supply a lung of a shape suited to fill the irregular thoracic cavity of man. Trichotomy, or division into three branches, never takes place, although it has been described as an occasional occurrence by previous anatomists, and particularly by Aeby. Dr. Ewart shows that this apparent trichotomy is the result of a bifurcation, followed by the immediate redivision of one of the branches of this bifurcation, but not of the other. And, in what would appear to be the most typical cases of trifurcation, on close inspection from different aspects of the injected tree, the true (dichotomous) nature of the divisions will become evident.

Another interesting observation made by Dr. Ewart upon the mode of branching—and one which has escaped Professor Aeby—is that, as a rule, succeeding bifurcations take place in planes at right angles to one another; thus, if the first bifurcation of a tube takes place in the sagittal, the bifurcation of its branches will take place in the transverse plane.

Dr. Ewart's description and nomenclature of the chief branches derived by bifurcation from the main bronchus may, perhaps, be given with advantage. It will be observed that the names are the same as those already given for the various "distributions."

The first bifurcation of the air-tube which takes place is the slightly uneven dichotomy of the trachea, with the production of right and left bronchi; then following the right bronchus, its first bifurcation takes place an inch from the trachea into an upper lobar bronchus (eparterial bronchus of Aeby) for the upper lobe of the right lung and a remainder known as the bronchus intermedius. This bronchus intermedius, of large size, runs downwards and outwards, and divides into two—a middle lobar bronchus running forwards (for which Dr. Ewart proposes the name of cardiac bronchus, because there is no middle lobe in the left lung, although there is a corresponding bronchus, which may also be called "cardiac"), and a remainder, the lower lobar bronchus. Of these two, the middle lobar bronchus is the first ventral hyparterial of Aeby; the lower lobar bronchus is his bronchial stem. After a very short course the remainder or lower lobar bronchus divides into a large,

short branch, which runs nearly horizontally backwards, and a remainder. The former is distributed chiefly to the posterior surface of the lower lobe in its upper two-thirds, as well as to its middle axillary third. Dr. Ewart has proposed for it the name of posterior horizontal bronchus, on account of its direction and distribution (it corresponds to the first dorsal hyparterial of Aeby). Following the remainder, after the last bifurcation, it divides into an inner smaller branch, which runs backwards and inwards to the posterior two-thirds of the inner surface of the lobe, and a remainder. The former is called by Dr. Ewart, with regard to the anatomical relations of its distribution, the retrocardiac bronchus. It is the cardiac accessory of Aeby, who finding, owing to its origin from the inner side of the bronchial stem, that it could not possibly be put into either the ventral or dorsal set of hyparterial bronchi, classified it as an "accessory" or secondary bronchus, although it arises from his bronchial stem, is of a fair size, and is distributed to a definite region, which is—constantly in some animals and occasionally in man—a separate lobe. The remainder, after the bifurcation, which gives rise to the retrocardiac bronchus, soon presents what appears to be a trifurcation; but, as already explained, upon close examination it is found not to be a true one. It is a bifurcation, followed immediately by the division of one of the branches of the bifurcation. The three branches arising in this way lie at first close together, side by side, in an antero-posterior plane, they soon diverge, and are distributed to the base of the lobe, one anteriorly, one to its axillary part, and the third posteriorly; they are called—and they arise in this order—the anterior basic, the axillary basic, and the posterior basic. At the *level* of the interval between the origins of the anterior and axillary basic there comes off a small bronchus, which runs horizontally backwards to the posterior surface of the lobe between the posterior horizontal and the posterior basic; it is known as the lesser posterior horizontal. Of these four branches the anterior basic would seem to represent the second hyparterial ventral of Aeby, the lesser posterior horizontal the second hyparterial dorsal, the axillary basic the third hyparterial ventral. The posterior basic *and its branches* probably represent Aeby's third and fourth hyparterial dorsal and fourth hyparterial ventral. All these branches described come off within what Dr. Ewart calls the root-zone—a region made up entirely of large bronchi and blood-vessels, containing no true pulmonary tissue. The branching of the posterior basic, which gives rise to

the third and fourth dorsal and fourth ventral of Aeby, takes place outside this root-zone and within the pulmonary tissue proper, consequently Dr. Ewart excludes them from the society of the other *primary* bronchi just described, and places them amongst the ramifications of these bronchi.

It will be necessary to compare the branching in the left lung with that in the right, and to point out the important differences between the two. On the left side all the bronchi arise below the point at which the artery crosses the main bronchus: hence they are all hyparterial. The first branch which comes off springs from the antero-lateral aspect of the main bronchus. Aeby calls it the first ventral hyparterial. and he considers that it corresponds to the middle lobar bronchus of the right side (the right first ventral hyparterial); but Dr. Ewart holds an entirely different view regarding it. He advances the opinion that it corresponds to both upper and middle lobar bronchi of the right side united into one, for, after a very short course, this trunk (which he calls the bronchus impar) divides into a typical upper lobar bronchus, corresponding in distribution and branching to that of the right side, and a cardiac—or middle lobar bronchus—which runs downwards, to supply a portion of the upper left lobe, corresponding in position to the middle lobe of the right lung. The other points of interest in the branching of the bronchus in the left lung are that the retrocardiac is a secondary branch coming from the anterior basic, and the lesser posterior horizontal is a branch of the posterior basic.

Here we may refer for a moment to the obliquity of the two main bronchi. The old teaching was that the right was the more horizontal, the left the more oblique. Aeby showed that the opposite is really the case—the right is the more oblique, the left the more horizontal. With this observation Dr. Ewart entirely agrees, and he points out how the mistake was fallen into—by following the outer margin of the bronchus instead of the inner or the whole outline, for on the right side the outer wall runs very soon into the upper wall of the upper lobar bronchus, which is nearly horizontal, and looking along this outer wall one gets the false impression that the right main bronchus is much more horizontal than it really is; but a little dissection below reveals the inner margin of the bronchus, and shows its true direction. The direction of the left bronchus is, of course, associated with the position of the heart, which compels the tube to run more horizontally to get to its destination.

As regards the homology of the lobes, Dr. Ewart's views are most important. He advances the theory, contrary to what had been previously accepted on all hands from Aeby, that the left upper lobe, instead of being the homologue merely of the right middle lobe, really corresponds to a middle and upper lobe united into one. The grounds for this assumption are partly given above. They are, that the first bronchus given off by the left main trunk (although it is hyparterial, and although Aeby considers it the representative of the right middle lobar bronchus), soon breaks up into two branches which correspond exactly to the upper and middle lobar bronchi of the opposite side. And, further, as will be again pointed out, the arterial supply of the middle lobe of the right lung is identical with the part (cardiac) of the upper lobe of the left lung, which Dr. Ewart finds is the representative of the middle lobe of the right. So that both bronchial and arterial supply point to the conclusion which Dr. Ewart has arrived at. This view certainly seems more natural, and more in conformity with the symmetry which we should expect to find in paired organs than Professor Aeby's ingenious theory. And when one comes to think over the matter and over Dr. Ewart's theory he is surprised that it never occurred to him before, and that he never rebelled against Aeby's view, of which Dr. Ewart well says—"The ingenuity of that view is the most probable explanation for the marked success which it has enjoyed." The lower lobes of the two lungs are universally admitted to be homologous; still, Dr. Ewart says, after a long and careful study of these points, he is as firmly convinced of the correspondence of the upper lobe of the left lung with the upper and middle lobe of the right as he is of the correspondence between the two lower lobes.

Again, Dr. Ewart revolutionises our former ideas as to the relations of the blood-vessels to the bronchi. The usual description at the root of the lung he finds correct—vein in front, artery in middle, and bronchus behind, &c.—but beyond this he cannot go. According to Quain we find that both the arteries *and* veins accompany the bronchi, branching with them, and running with a definite relation existing between the three tubes—namely, the artery behind and above, the vein in front of and below, the bronchus. Further, we are told that the main trunk of the pulmonary artery crosses the bronchial stem and then runs down behind it. On the other hand, Dr. Ewart points out that the *arteries* run and branch with the bronchi, but that the veins neither

accompany them nor branch with the air tubes; and also that the relations quoted above do not obtain—arteries are not found by any means constantly behind the bronchi nor the veins in front. The arteries certainly accompany the bronchi closely, clinging to them in all their ramifications. Still no definite rule can be laid down giving the aspect of the bronchus on which the artery will be constantly—or pretty constantly—found, such as that given above. There is, indeed, the greatest diversity in the arrangement of the two vessels. For instance—in the right lung the main artery for the upper lobe runs in front of its bronchus, while most of its smaller branches are found behind their bronchi; the trunk which runs down after giving off the last artery, and breaks up into middle and lower lobar arteries is found *in front* of the corresponding bronchus (bronchus intermedius); the middle lobar artery is anterior and external to its bronchus; the lower lobar artery anterior and slightly external below; the anterior basic artery is anterior and external; and the posterior basic is behind its bronchus. In the left lung the pulmonary artery, after crossing the bronchus, gives off the upper lobar branch, and then runs down *behind* the bronchial stem, contrasting strongly with the corresponding artery on the right side, which is found *in front* of the bronchial stem. Lower down the main arterial trunk, which above is behind the bronchus, becomes external to it. The arterial supply of the left cardiac region—that portion of the left upper lobe which Dr. Ewart considers is the undoubted representative of the middle lobe of the right lung—is worthy of note. It is supplied by a large distinct artery, almost identical in origin, position, and distribution with the artery which supplies the middle lobe of the right side. The only rule which Dr. Ewart can formulate for the relation of the artery to the bronchus is that the artery avoids the membranous parts of the air tube as far as possible. In comparing the two arteries, right and left, the most striking difference will be the vertical course and absolutely posterior position (as regards the bronchus) of the left main arterial trunk, as compared with the obliquely downward and outward direction of the right and its anterior position. And one of the most striking points of agreement is in the origin and behaviour of the two cardiac arteries—the middle lobar on the right side, and the artery supplying the region which, according to Dr. Ewart, is its representative, on the left.

And here we may reconsider for a moment Professor Aeby's and

Dr. Ewart's views as to the homology of the lobes, and the grounds upon which these views are built.

According to Aeby the upper left lobe is the homologue of the middle right lobe, because the bronchus which supplies each comes off below the point at which the pulmonary artery crosses the main bronchus, or is, in his terms, hyparterial; and, secondly, for a negative reason, because he could find no upper lobe in the left lung supplied by an eparterial bronchus, as is found on the right. Then, briefly, he bases his ideas of the homology of the lobes upon the relations of the pulmonary artery to the bronchi which supply them, and by this he tests their morphology. Dr. Ewart questions the competency of the test, and sees no reason why the artery should get precedence in determining the question. But even if the artery get precedence it can be used against, as well as for, Professor Aeby's theory, for it will be remembered that the arterial supply of the portion of the upper left lobe, which Dr. Ewart has called cardiac, is exactly similar to the arterial supply of the middle or cardiac lobe of the right side. Dr. Ewart, on the other hand, bases his views of the morphology upon both the bronchial and arterial distributions worked out with the most careful detail, and he finds that according to the arterial supply the cardiac region of the left lung agrees with the middle lobe of the opposite side, while in their bronchial supply they differ only in this, that the bronchi for the upper and middle (or cardiac) lobes on the left side are united for a short distance, while they are separate in the right.

About the detailed description of the veins very little can be said here, but the general conclusions regarding their distributions are as follows:—They do not accompany the arteries and bronchi, as usually taught; on the contrary, coming from the two pulmonary veins on each side, they diverge, running some upwards, some outwards, and others downwards, and their arrangement bears some resemblance to the fingers of an outstretched hand. The one guiding principle which seems to direct them in their course is to keep as far away as possible from the bronchi, so that they are usually in the middle of the interspace between two or more air-tubes. Between them and the arteries there is "neither symmetry of distribution nor regularity of distance," and they usually cross the arteries (and bronchi) at a considerable angle, often approaching 90°. It is rather direction than distance which separates the veins from the bronchi and arteries; the latter enter the lung

from above, the vein enters from below—"the two sets cross within the root of the lung and at the periphery they cross and cross again, as if their initial divergence could never be rectified." In the lobule the artery and bronchi enter at the narrow end, the two or more venules enter at its sides.

Dr. Ewart points out an interesting relation of the veins to the groundwork of the lung, and a peculiar function associated with this relation. At the hilum he shows that the veins are very closely connected with the pleura; at the periphery, again, they are closely connected with it—indeed many venules, and even tolerably large veins, are found running for a great part or the whole of their course on the surface of the lung immediately under the pleura. Such is the case, particularly on the mesial aspect of the lung; these veins are known as sub-pleural veins. Between the hilum and the periphery the veins are found in the interbronchial and interlobular spaces—so that they play, according to Dr. Ewart, the part of elastic ligaments in the lung, binding the various parts together. At the hilum and in the root-zone the arteries are more tough and elastic than the veins; but, beyond that, toughness and elasticity are more marked in the veins, which are here more of the arterial type than are the arteries.

It is interesting to remark that the three lobes of the right lung are not represented in the venous distribution by three vessels—both lungs alike possess two main pulmonary veins only.

Dr. Ewart quotes Sappey, and agrees with him in stating that the *bronchial* venules corresponding to bronchi smaller than those of the third and fourth order empty themselves into the pulmonary veins.

This summary might be well brought to a close by giving Dr. Ewart's pithy description of the component parts of a lobule of the lung—

1. A perilobular membrane.
2. A single bronchiole, which furnishes the entire air-supply; this is known as the lobular bronchiole.
3. A lobular branch of the pulmonary artery which accompanies the bronchiole.
4. Two or more lobular branches of the pulmonary vein.
5. Lymphatic vessels.
6. Nerve filaments attached to the bronchiole.

We append a simple table, which may be found useful. It gives the primary bronchi of the right lung according to Dr. Ewart's

and Professor Aeby's nomenclatures. The corresponding tubes in the two rows will be found on the same line; the numbers at the left show the order of bifurcation in Dr. Ewart's, of branching in Professor Aeby's table; the letters after the names of bronchi indicate their principal direction. It is the remainder from No. 1 which divides into the two parts of bifurcation, No. 2, and so on. (O = outwards, F = forwards, B = backwards, I = inwards, D = downwards.)

	Dr. Ewart's	Professor Aeby's
	Right Bronchus.	
1	Upper lobar bronchus, O., and Remainder.	Eparterial bronchus (*upper lobar*), Bronchial stem.
2	Middle lobar or cardiac bronchus, F., and Remainder (*Inf. lobar*, B.).	1st. Ventral hyparterial bronchus, Bronchial stem.
3	Posterior horizontal bronchus, B., and Remainder.	1st. Dorsal hyparterial bronchus, Bronchial stem.
4	Retrocardiac bronchus, B. & I., and Remainder.	Cardiac accessory, Bronchial stem.
5	Anterior basic, D. & F., and Remainder.	2nd. Ventral hyparterial bronchus, Bronchial stem.
6	Lesser posterior horizontal bronchus, B., Remainder.	2nd. Dorsal hyparterial bronchus, Bronchial stem.
7	Axiliary basic, D. & O., Posterior basic, D. & B.	3rd. Ventral hyparterial, Bronchial stem, *which afterwards by branching within the pulmonary tissue gives rise to the 3rd & 4th dorsal and the 4th ventral hyparterial bronchi.*

Ambrose Birmingham.

Inebriety; its Etiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M.D., F.L.S. Second Edition. London: H. K. Lewis. 1889. Pp. 471.

The Treatment of Inebriety in the Higher and Educated Classes. By James Stewart, B.A. London: H. K. Lewis. 1889. Pp. 15.

The establishment of the Society for the Study of Inebriety has led to the appearance of a large amount of literature on a formerly neglected subject.

Dr. Kerr has written the first systematic treatise on the subject of inebriety, and his long and varied experience has enabled him to fill its pages with illustrative and interesting cases. The appearance of a second edition seventeen months after the first shows that it has rapidly been adopted as a handbook. The present edition is slightly enlarged, and has a fuller index. The legislative section is brought down well to date.

Mr. Stewart's pamphlet deals very ably with the treatment of the well-to-do and intellectual inebriate. It is unfortunate that it is so hard to find places where the intelligent system of treatment he sketches out is practised.

Anæsthetics, Ancient and Modern; their Physiological Action, Therapeutic Use, and Mode of Administration; together with an Historical Resumé of the Introduction of Modern Anæsthetics—Nitrous Oxide, Ether, Chloroform, and Cocaine; and also an Account of the more celebrated Anæsthetics in Use from the Earliest Times to the Discovery of Nitrous Oxide. By George Foy, F.R.C.S.; Fellow of the Royal Academy of Medicine in Ireland; Surgeon to the Whitworth Hospital, Drumcondra. London: Baillière, Tindall, & Cox. 1889. 8vo. Pp. 175.

Mr. Foy's useful treatise is not so long-winded as his title-page; and readers of this Journal who have read his papers on anæsthetics in our pages will be glad to see and to possess them in collected form, especially as the promise made by Mr. Freeman, in the preface to his excellent "Few Words on Anæsthetics" (Churchill, 1883), to publish an elaborate treatise on the subject, remains—so far as we are aware—unfulfilled. There is still room for a larger work than Mr. Foy's, in which some anæsthetics are very inadequately treated. Hypnotism, for instance (contemptuously dismissed by Freeman in a few lines), deserves much fuller treatment than it receives in less than half a page from Mr. Foy, and better reasoning than the concluding sentence of the meagre notice of it exhibits:—"It, however, has the tendency to produce hysterical affections, and some instances are on record of temporary, and even permanent, insanity following its use, of which untoward result Dr. Doneto's patient is a well-marked example; *therefore* its application, save in rare cases, is unadvisable." The same language may be applied to Mr. Foy's favourite anæsthetic, chloroform. We may add that the "stroking" of Greatrakes and others mentioned in the text has no connection at all with Mr. Braid's hypnotism, which appears in the middle of them. It is rather analogous to the modern massage. Nitrous oxide, also, it appears to us, is not sufficiently appreciated therapeutically by our author, although its history is given with tolerable fulness. In connection with this subject we may observe that the well-known Dr. Colton, the energetic advocate of nitrous oxide as an anæsthetic—who was *not*

an American *dentist*—appears in Mr. Foy's pages in the disguise of "Cotton."[a]

The pages devoted to chloroform are excellent. Another attempt is made to prick the Simpson bladder, but the tissues are tough, and effectual puncture difficult. The popular belief that Sir James Simpson invented anæsthetics generally and chloroform in particular is firmly rooted, even south of the Tweed. What Simpson did do was great—he "introduced ether-anæsthesia into the practice of midwifery," on the 19th of January, 1847. In the following November he substituted chloroform for ether, on account of the unpleasant odour of the latter; and what led to the selection of chloroform as a substitute will be found detailed on p. 36, in a quotation from Waldie's "Medicinal History of Chloroform," but he neither discovered it nor was the first to use it.

"The Edinburgh *Daily Review* of October 27th, 1869, contained an account of a banquet given to Simpson in recognition of the material advantage to the city of his residing there, and he was complimented by the Lord Provost on his discovery, twenty-two years after his first use of chloroform as an anæsthetic, and thirty-seven years after it was first used by Professor Ives, of New Haven, whose case is related under date of 2nd January, 1832. Notwithstanding the many opportunities afforded to Simpson of acknowledging the claims of Americans to the discovery of the anæsthetic properties of chloroform, there is no mention on his part of their priority of claim to the discovery, and Guthrie and Ives remained unknown to the multitudes that gave the credit to Simpson."

In concluding the subject of chloroform, Mr. Foy remarks judiciously on the carelessness with which, even still, this and other anæsthetics are administered, and complains that "to this day, of the many licensing bodies that grant certificates in medicine and surgery, not one of them requires the student to be trained in the administration of anæsthetics."

The virtues of "methylene"—as the bichloride of methylene is called for convenience—are vouched for by Dr. Richardson and Sir Spencer Wells, while other authorities deny that CH_2Cl_2 possesses any anæsthetic properties at all, the commercial article

[a] It was unkind of the author to name in his preface the gentleman who read his final proofs. Misprints are innumerable, and nowhere does the printer play such fantastic tricks as in dealing with Latin—*e.g.*, "De Mirabilis Mundis," and "Tractatus quinqæ Medico-Physico, Quorum primum agit De Sal-Nitro et Spiritu Nitros Aereo, Secundus De Respiratione, Tertius De Respiratione Fœtuin utero et ovo, Quartus De Moto Musculari, Ultimus De Rachidite" (p. 45).

being merely diluted chloroform. The drug is too expensive for general use. "The advantages claimed for it by its friends are not sufficient to override the question of cost."

In Chapters VIII. and IX. will be found a good account of cocaïn, which appears to be losing ground as an anæsthetic. Mr. Foy says:—

"That cocaine does not fulfil all the expectations of its early eulogists is indubitable. Dangers attend its use, as they do that of all active drugs; but more than that, its physiological effects are not such as to warrant the unstinted praise so freely bestowed on it a few years since. Its anæsthetic action is too local to make it of any service in other than superficial operations. From my own experience of it I found that the hypodermic injection did not produce anæsthesia of the deeper tissue, so that whilst the skin-cut was painless the sensibility of the subcutaneous and muscular tissues was little, if at all, affected. . . . Even in ophthalmic surgery it has not met all the requirements of the profession."

In the choice between ether and chloroform our author unequivocally prefers the latter. He supports his opinion by masses of statistics, but if ever there was a case in which statistics are worthless this is one. What weight can be attached to such statements as that, "in the English army in the Crimea chloroform was administered 12,000 times, with one single death reported as attributed to it?" The attempt to determine the question by rational statistics has not yet been seriously made. Both anæsthetics are safe and good, both require care and skill in administration—which often they do not receive—and patients will, occasionally and in infinitesimal minority, die directly from either.

Although we have ventured to criticise Mr. Foy's book as regards some of its details, we congratulate the author on the industry, research, and learning which he has brought to bear upon his work, and we claim for him to have made a valuable and scholarly contribution to the literature of anæsthetics.

Defects in Plumbing and Drainage Work. Described by FRANCIS VACHER. Manchester: John Heywood. 1889. Pp. 83.

MR. VACHER has succeeded in exposing in a graphic manner many of the dangers to health, arising from faults in the sanitation of domestic houses. Over a hundred illustrations, clearly drawn, and showing, even to those unaccustomed to study plans, the nature of the faults, are grouped under eight headings—Rain Conducting,

Trapping Yard and Area Drains, Sink Waste Pipes, Bath and Lavatory Waste and Overflow Pipes, Watercloset Fittings, Ventilating Soil Pipes, House Drains, Domestic Cisterns, Hot and Cold Water Apparatus. At the head of each section are a few remarks on how the work dealt with in the section should be carried out—this makes it easier to understand the subsequent diagrams of errors. All the illustrations are of actual faults in recent work, observed by the author or communicated to him by other Medical Officers of Health. We can recommend this picture-book of blunders as a cheap shilling's worth

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Pathological Report, 1887–1888, *of the City of London Hospital for Diseases of the Chest, Victoria Park, E.* By Sidney Martin, M.D., London; Assistant Physician to the Hospital; late Pathologist and Medical Registrar. Printed for the Victoria Park Hospital by James Maclehose & Sons, Glasgow. 1889. Pp. 33.

This Report contains notes of 48 cases of phthisis and tuberculosis, 15 cases of cardiac disease, and a few cases of bronchitis, empyema, thoracic tumours, &c. The description of each case is arranged in a vertical column, and is subdivided under various headings, such as Age, Complications and Course of Disease, Lungs, Intestines, &c., so that any desired particulars about these cases can be learned at a glance. The notes are concise, yet clear, and the points of most importance are well brought out. Much credit is due to Dr. Sidney Martin for this excellent Report.

We will briefly refer to one or two of the most interesting points we have noticed. In 22 cases of phthisis out of 40 the intestine was attacked by tubercular disease; in 8 of these 22 cases there was marked constipation throughout, although in some of them both large and small intestines were very extensively ulcerated, and no opiates were given to the patient which could cause constipation.

In 5 cases there was pyopneumothorax; in one of these the pus had burrowed through the diaphragm and opened into the descending colon.

In one case of Addison's disease, with marked discoloration of three months' standing, the suprarenal capsules were much smaller than usual, but to the naked eye appeared normal in structure; with the microscope, however, they were seen to consist chiefly of a small-celled fibroid growth, which encapsuled in a few parts the remaining normal cells of the cortex—as in cirrhosis of the liver.

The medulla was almost totally destroyed. The surrounding connective tissue was much thickened. There was no caseation anywhere, and no tubercle-bacilli could be found.

It is a pity all hospitals do not follow the example of the Victoria Park Hospital, and publish a similar record of the *post-mortem* examinations made in them; many most interesting and instructive pathological records are at present completely lost.

This Report of the City of London Hospital for Diseases of the Chest is not for sale, but can be obtained from the Secretary of the hospital, 24 Finsbury-circus, London, E.C.

Father Damien; a Journey from Cashmere to his Home in Hawaii. By EDWARD CLIFFORD. London: Macmillan & Co. 1889. 8vo. Pp. 176.

IT is impossible not to take an interest in everything relating to the hero-martyr, Father Damien de Veuster. His self-denying labours among the unhappy victims of that fell scourge, leprosy, in their island-home, Molokai, are now a matter of history. Molokai is one of the Sandwich Islands, which has been set apart by the Hawaiian Government for the segregation of lepers, of whom, alas! there is no lack in those fair islands of the Pacific.

Mr. Clifford has succeeded in writing an attractive and readable book, running to 176 pages, and consisting of five chapters; of these three are a reproduction of articles which originally appeared in the *Nineteenth Century*. In the pages of Mr. Clifford's book we are told a good deal about Father Damien, and a great deal more about many other things. The book reminds us of a puzzle-picture; as we read page after page we are constrained to ask, "But where is Father Damien?" Thus, in the introductory chapter the author gives us a historical insight into the phases of religious thought through which he himself had passed, together with an excellent statement of the reasons which prevented, and still prevent, him becoming a Roman Catholic. Mention of Father Damien is made on four out of the twenty-nine pages to which this chapter runs; but Edward Clifford, his religious tenets and his travels, are the central topics round which everything else revolves. Chapter II. is devoted to the Hawaiians and Hawaii.

In Chapter III. we are for the first time introduced to Father Damien, and in it also we bid him a final farewell. It is, however, right to mention that this chapter runs to eighty-eight pages, or

nearly half the book. The story of Father Damien's illness and death is most pathetic :—

"It was after living at the leper settlement for about ten years that he began to suspect that he was a leper. The doctors assured him that this was not the case; but he once scalded himself in his foot, and to his horror he felt no pain. Anæsthesia had begun, and soon other fatal signs appeared. 'You see my hands,' he said; 'all the wounds are healing, and the crust is becoming black. You know that is a sign of death. Look at my eyes, too; I have seen so many lepers die that I cannot be mistaken. Death is not far off.' . . . Sometimes he suffered intensely; sometimes he was partly unconscious. The terrible disease had concentrated itself in his mouth and throat. . . . He was only forty-nine, and he was dying."

The remainder of the book contains an account of the "Lake of Fire" in the crater of Kilauea, a celebrated volcano of Hawaii (Chapter IV.), and a dissertation on "Our Next Duty" (Chapter V.). "It is earnestly to be desired," writes Mr. Clifford, "that legislation as to leprosy in India should be the practical outcome of the sympathy called forth by Father Damien's life and death." We heartily re-echo this sentiment.

The account which Mr. Clifford gives of gurjun balsam, or wood-oil, as a remedy for leprosy, will be of special interest to physicians. If properly used, it seems to be most valuable—not only as a palliative, but also as a curative, agent. Even in Father Damien's case a fortnight's trial of the balsam produced good effects which were evident to all. His face looked greatly better, his sleep returned, and his hands improved. At the same time it was impossible not to fear that after several years' progress the disease had already attacked some vital organ, and this indeed proved to be the case.

Gurjun balsam, or wood-oil, is the produce of a fir-tree (*Dipterocarpus turbinatus*) which grows plentifully in the Andaman Islands. Its efficacy was first discovered by Dr. Dougall, and Mr. Clifford was assured by Sir Donald Stewart, who was then Governor of the Islands, and who lent him the official medical report, that every case in the place was cured by it after some months' treatment.

The lepers were convicts, and it was therefore possible to enforce four hours a day of rubbing the ointment all over their bodies. They began early in the morning by cleansing their bodies with dry earth, then they rubbed in the balsam for two hours, and finally washed it off. They went through the same process in the

afternoon, and each time they also took a small dose internally. The taste is not disagreeable. It is taken mixed with equal quantities of lime-water, the maximal dose being half an ounce of this mixture. In its raw condition the balsam is brown and sticky, but when shaken up with three parts of lime-water it makes an ointment as soft and smooth as butter. Mr. Clifford says that in some of the cases treated with this remedy the disease was of many years' standing, and the state to which it had reduced its victims was indescribably dreadful, yet after eight months' treatment the sufferers were able to run and to use a heavy pickaxe, and "every symptom of leprosy had disappeared."

It goes without saying that the paper and type of this book are faultless, and a beautiful portrait of Father Damien forms the frontispiece to the work.

Annual of the Universal Medical Sciences. Edited by CHARLES E. SAJOUS, M.D.; Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, &c. In Five Volumes. Philadelphia, New York, and London: F. A. Davis. 1889.

THE magnitude of the undertaking which for a second time Dr. Sajous has brought to a successful termination, may be gathered from the fact that this marvellous *Annual* consists of five large volumes, each containing several hundred pages. Judged by its size, it may be called a "hardy Annual," and such indeed it is.

According to the title-page, the work is a yearly report of the progress of the general sanitary sciences throughout the world. Dr. Sajous is assisted in his editorial labours by seventy associate editors, together with more than two hundred corresponding editors, "collaborators," and correspondents in all parts of the inhabited earth. The work is illustrated with chromo-lithographs, engravings, and maps—almost without exception of great merit, and we shrink from guessing what sum of money has been expended in its publication. It forms the most complete record of the latest advances in all branches of medical science which we possess, and is a vast treasure-house of information.

To each volume is appended a complete and compact index in addition to the full triple index (general index, therapeusis, and list of authors quoted) of the entire work which appears at the end of the last volume. The reference list of journals includes 756 entries, besides which there is a similar list of 235 books, mono-

graphs, theses, transactions, and so on, which are quoted in the work. It is interesting to note that the DUBLIN JOURNAL OF MEDICAL SCIENCE is No. 16 in the list of journals. We give a chance example of how to use the "Annual." Under the heading "Climatology and Balneology," in Vol. V., we read "Ems (Quinlan $\frac{16}{May}$)." This means a reference to Dr. Quinlan's paper on "The Springs and Baths of Ems," which appeared in the number of this Journal for May, 1888, Vol. LXXXV., p. 408.

Of such a work of course any detailed account is out of the question, and we have only to say that no medical library or reading-room should be without a copy of this "Annual."

Army Medical Report for the Year 1887; *with Appendix.* Vol. XXIX. London. 1889.

FROM the Surgeon-General's forwarding letter, which is dated "May, 1889," we infer that the period of gestation of an Army Medical Report is seventeen months. We are not without experience in the preparation of Reports of this nature, and we are decidedly of opinion that there is great and unnecessary delay in the publication of these volumes; and that the enormous labour and considerable cost involved in their preparation is, to a great extent, wasted, through the lateness of their presentation to the public. For ourselves, we cannot undertake to review these records of the past; but, as we dare not count upon living to see the Report for 1889, we shall extract a few facts and figures relating to 1887, from which our readers will be able to guess at the state of things in 1889.

The first thing that strikes us—accustomed to read in the ordinary newspapers speculations about the probability of the United Kingdoms being drawn into a European war, and soforth—is the almost ludicrous pettiness of the costly British army. In 1887 the average annual strength was somewhat short of 196,000—"warrant officers, non-commissioned officers, and men"! Of these 101,000 were stationed in the United Kingdom, nearly 64,000 in India, 5,272 in Egypt, and the remainder were scattered over the world—2,305 on board ship, and the rest in *ten* stations. Moreover, the scanty total was diminished by 10,387·07 (to be very precise), "constantly non-effective from sickness." This last number represents 54·17 per 1,000 of strength, and seems to be nearly constant, as the corresponding rate for 1877–86 was 53·72.

As the inefficiency caused by venereal affections is attracting attention at present, in connection with the suspended Contagious Diseases Act, we turned to see how matters stood in this respect in 1887. On a strength of 101,114 serving in the United Kingdom, 6·72 per 1,000 were constantly inefficient from primary syphilis, 3·59 from secondary, and 6·34 from gonorrhœa. "Including all forms of venereal disease, the total number of admissions was 25,574, and total number of men constantly sick from these diseases 1,931·33. The admission ratio, therefore, was equal to 252·9, and the ratio of constant inefficiency to 19·10 per 1,000." In India, where an attempt is being made to undo the mischief caused by the action of the House of Commons Resolution, the following figures show the magnitude of the evil:—"Including all forms of venereal disease, the total admission ratio reaches 324·4 per 1,000. . . . . The total amount of constant inefficiency from these diseases was 22·32 men per 1,000."

The paragraph relating to suicide in the United Kingdom garrisons shows an instance of apparently capricious deviation from average:—

"The number of suicides among the troops serving in the United Kingdom was 11, as compared with 29 in the preceding year, and with an average of 24 per annum for the last five years. Nine of the suicides were by gunshot, one by cut-throat, and the other by the man placing himself to be run over by a train. In nine instances a verdict of temporary insanity was recorded, in one a verdict of *felo-de-se* was given, and in the other the coroner's jury returned a verdict of suicide, but that there was no evidence as to his mental condition. The average age of the men who committed suicide was $29\frac{3}{4}$ years, and the average length of service $9\frac{3}{4}$ years."

The recruiting figures are interesting, as illustrative of the low physique of the classes from which the rank and file of the army is supplied. 60,297 men (or boys) were examined for enlistment, and of these 456 per 1,000 were rejected. Of 51,884 inspected by medical officers 458 per 1,000 were rejected; 9,092 were examined primarily by civil medical officers, and of these 210 per 1,000 were pronounced unfit; and of 7,186 passed by them, 211 per 1,000 were subsequently rejected, on examination by medical officers. If 249 actually enlisted, but found, within three months, unlikely to prove efficient soldiers, and discharged, be added to the number rejected on primary or secondary examination, the ratio per mille of rejections becomes 544.

Before leaving this subject we may add a few items relating to the nationalities of recruits. Of 1,000 men enlisted in the United Kingdom, England and Wales supplied 763, Ireland 129, Scotland 96, and British Colonies and Foreign Countries 12. Of these four classes the ratios per mille rejected at primary or secondary inspection, or discharged as unfit within three months of enlistment, were, respectively, 473·21, 404·22, 405·73, and 342·86.

The Appendices occupy 106 pages, and contain ten papers on miscellaneous subjects. It is not to be expected that medical officers should send communications of overwhelming interest to be deposited in the Surgeon-General's office for eighteen months or more, when the medical journals are open to them; and, accordingly, these papers are not overwhelmingly interesting. In the Report on the Progress of Hygiene for the year 1888 will be found some useful analyses of concentrated foods, Professor J. Lane Notter, M.D., being the reporter; and Brigade-Surgeon Godwin, Asst. Prof. Military Surgery, reports the Transactions of the Congress of Surgery, held at Paris in March, 1888, to which he was deputed by the Director-General.

Transactions of the American Surgical Association. Volume the Seventh. Edited by J. Ewing Mears, M.D., Recorder of the Association. Philadelphia: P. Blakiston, Son & Co. 1889. Pp. 225.

This volume contains, besides the usual lists of Fellows, &c., the Address of the President, Dr. David W. Cheever, of Boston, and fourteen original papers. The President's text is, "The Future of Surgery without Limit," and his discourse is brief. He gives a list of "modern and useful operations, as distinguished from those barely justifiable," which would take away old Vicary's breath—nay, perhaps, Sir Astley Cooper's! No doubt a considerable number of the following, which he classes as "on trial," will, before many years, be promoted to the "justifiable" list. As his list stands it includes "resection of the pylorus, cancerous intestine or omentum; removal of the spleen, of large bronchoceles, of the larynx, of the pancreas, the prostate gland, the normal ovary; fixation of the kidney or the uterus; puncture of the pericardium; opening of gangrenous abscesses in the lungs; tapping the ventricles of the brain."

Of the papers—none of which is unimportant or looks like

padding, and all of which are made more valuable by careful reports of the discussions to which they gave rise—the most interesting, perhaps, is the first, on "The Early Diagnosis of Malignant Growths," by Dr. J. Collins Warren, of Boston. He describes an instrument which he has devised for removing, harmlessly and painlessly, a portion of suspected tissue for submission to microscopical examination, on which, as he seems to think, an infallible diagnosis can be founded. A specimen obtained by this microtome "represents the different layers of the growth from its periphery to the centre—their anatomical relations have not been disturbed; in fact, the tissue, where it is cut with the microtome, has scarcely been touched during the process of removal, and is consequently in the best condition for microscopic study." It is scarcely possible to over-rate the importance of early diagnosis of tumours suspected of malignancy, and the microscope being useful in the witness-box, however incapable as judge or jury, Dr. Warren's instrument will be found valuable.

Other papers of which we should especially recommend study are Dr. M'Graw's (of Detroit) "Contribution to the History of Gunshot Wounds of the Intestines," Dr. Homan's (of Boston) "Successful Case of Nephrectomy for Removal of Cancer of the Right Kidney," and Dr. Tiffany's (of Baltimore) paper on "Free Division of the Capsule of the Kidney for the Relief of Neuralgia." Dr. Homan mentions that, in 1884, he had collected twenty-six reported cases of "nephrectomy for the removal of cancerous or sarcomatous tumours of the kidney," with a mortality of "about forty-five per cent." He lays down, as the result of his experience, that small renal tumours and such as can be reduced in size by tapping are readily removed by lumbar incision; but that large tumours—*i.e.*, such as weigh a pound or more, and cannot be diminished by evacuation of fluid contents, "would be most conveniently removed by an incision in the linea semilunaris or linea alba." Dr. Tiffany reports a case in which he exposed a painful kidney, on which he found a "deep stellate scar." A long needle was passed "through the scar, and also into the kidney in various directions." "A fine puncture was then made into the kidney pelvis at the lower end, and each calyx systematically explored as well as the pelvis (Jordan Lloyd's method); nothing was learned by this exploration. The capsule of the kidney was then freely slit open for a distance of three inches or more." Relief from pain was immediate. Four months had passed when the paper was read

before the Association, and the owner of this much-enduring kidney was still under observation, and inspiring hope of "a permanent favourable result." The idea underlying the procedure is, that the not uncommon cases in which kidneys have been opened, in expectation of finding calculi, when no calculus was found, may be explained by ascribing the symptoms to tension of the capsule of an irritated and swollen kidney—a tension which may be relieved by free division. The paper concludes with twenty-one cases in which the symptoms pointed to calculus in the kidney, but none was found on careful examination; and in a large proportion of them relief from pain, of longer or shorter duration, followed the operations, unsuccessful in their primary aim.

Bournemouth as a Health Resort. By A. Kinsey-Morgan, M.R.C.S.E. Illustrated. London: Simpkin, Marshall & Co. 1889. Pp. 98.

This is one of the usual semi-professional handbooks which emphasise the attractions of the places they deal with, laying much stress on their value as sanitoria. In some ways it is inferior, even amongst other works of its not very high class, as although ambitiously got up, its arrangement is confused, and its numerous full-page illustrations are decidedly bad. In the middle of the work is introduced, *àpropos* of nothing, sections of a well-drained house, a badly-drained house (both taken from Mr. Teale's well-known graphic handbook), and of a villa at Cannes, with all sorts of insanitary complications. The moral meant may be that houses in Bournemouth are safer than in Cannes, but this does not explain the section of the defective house which is British but has no precise locality attached—possibly it stands for Britain outside Bournemouth.

Health-Troubles of City Life. By George Herschell, M.D., Lond. Bristol: John Wright & Co. 1889. Pp. 71.

In simple language, evidently designed for the public rather than for his professional brethren, Dr. Herschell points out that exhaustion of the nervous system underlies and causes the deviations from health, preceding, in most cases, a "break-down," and describes how the early signs of approaching nerve-exhaustion may be recognised and avoided by attention to diet, exercise, and amusement.

Dermoids: or, Tumours containing Skin, Hair, Teeth, &c. By J. Bland Sutton, F.R.C.S. London: Baillière, Tindall & Cox. 1889. Pp. 131.

IN these, the Hunterian Lectures for the present year, Mr. Bland Sutton, following out the principles enunciated in his previous lectures, has applied the teachings of evolution to one particular branch of pathology, and by them endeavoured to elucidate some of the darkest problems of that science. Starting with the definition of dermoids as "cysts, or tumours, furnished with skin or mucous membrane (which may or may not be accompanied with the appendages peculiar to these structures), occurring in situations where skin and mucous membrane are not normally found," the author classifies them under three heads—(1) Sequestration dermoids; (2) tubulo-dermoids; and (3) ovarian dermoids. Sequestration dermoids "arise in detached or sequestrated portions of the surface epiblast, chiefly in situations where, during embryonic life, coalescence takes places between two surfaces possessing an epiblastic covering." In connection with this part of the subject, an interesting chapter deals with branchial fistulæ and cysts, the several varieties of which are fully described. Tubulo-dermoids are those which arise in connection with obsolete canals—that is to say, canals which were once functional, but now appear only in early embryonic life, or persist in rudimentary forms. In this group we find sacro-coccygeal tumours, lingual dermoids, and tumours in connection with the umbilicus. Ovarian dermoids arise from ovarian follicles, and form the largest and most dangerous group. Each of these varieties is treated in detail, and illustrated by typical cases. We can merely mention the chapters on "The Identity and Mutability of Skin and Mucous Membrane," and on "The Intestinal Origin of the Canal of the Central Nervous System," as abounding in most interesting and instructive facts, which lead to some startling deductions. The latter, especially, is important from the development given to the cœlom-theory of the Hertwigs. It will probably surprise many to learn that the ovarian follicles are "mucous crypts," though they cannot fail to admire the ingenious train of reasoning which is advanced in favour of the theory. The real merit of all Mr. Sutton's work lies in its far-reaching suggestiveness, and the infectious enthusiasm which he instils into it. The value of the book is in inverse proportion to its size, and is enhanced by numerous and good drawings. It will

repay careful study, and though not subscribing to all the conclusions put forward, we think it must be admitted to throw much and needed light on many obscure and difficult problems in pathology and the ætiology of new growths.

What will Trained Nurses Gain by Joining the British Nurses' Association? By Eva C. E Lückes. London: J. & A. Churchill. 1889. Pp. 16.

A temperate examination of the claims of the British Nurses' Association, the arguments for and against joining it, and well-reasoned conclusions against nurses throwing in their lot with it, are, in short, the structure of this little pamphlet. It is very well written and carefully thought out, and although of necessity partisan, deserves the respectful attention of those seeking the Royal Charter of Incorporation.

Madère: Station Médicale Fixe—Climat des Plaines—Climat des Altitudes. Par le Dr. C. A. Mourão Pitta. Accompagné d'un Guide-Madère. Paris: Félix Alcan. 1889. 8vo. Pp. 101.

Dr. Mourao Pitta, French Consul at Madeira, a graduate in Medicine of the Faculty of Montpellier, and formerly a student at the Schools of Medicine in Paris and at Montpellier, has just published this very readable work on Madeira. The book, although written in the first instance for French readers, is well worth a careful perusal by intending visitors of every nationality, and by all physicians alike.

With its warm, yet temperate, regular, and constant climate, the island of Madeira is considered to be particularly suitable for invalids affected with chronic diseases of the lungs and air passages, with or without tuberculisation.

Dr. Pitta, in the work before us, gives a complete account of the meteorology of the island and of its climate, its geology, its hygienic conditions, its animal and vegetable products, its population, and its customs. Situated only 30 hours' voyage from Lisbon, this health-resort is easily accessible, pleasant to reside in, and may be recommended in many cases to the invalids of Dr. Pitta's country (France), who seem to have sadly neglected a winter residence much frequented by English, German, and Russian seekers after health.

We notice one omission in the book—the absence of a good map of Madeira and the neighbouring islands; for, as our readers are doubtless aware, Madeira forms part of an archipelago situated in the Atlantic Ocean, off the west coast of Africa, about 10 degrees north of the tropic of Cancer.

The Cerebral Palsies of Children: a Clinical Study from the Infirmary for Nervous Diseases, Philadelphia. By WILLIAM OSLER, M.D. London: H. K. Lewis. 1889. Pp. 103.

THIS work is founded on an examination of an exceptionally large number of cases, as will be seen from the following figures:—Hemiplegia, 120 cases; bilateral hemiplegia, 20 cases; spastic paraplegia, 11 cases.

The cases are classified according to the distribution of the paralysis into the three classes just enumerated. Each of these groups of cases is described fully, and all the particulars illustrated by clinical records.

In infantile hemiplegia it is found that very few cases are congenital, and due either to intra-uterine disease or to injury at birth. Most of the cases occur within the first three years of life. In the other two forms of cerebral paralysis, on the other hand, a large number of the cases date from birth, and are the result of injury to the child during its passage into the world. Hence these cases have been called by Gowers "birth palsies." In many instances the arms are slightly involved, showing a condition which is a transitive one between bilateral hemiplegia and spastic paraplegia, but the number of clearly defined cases in each group is sufficiently large to make a division of the cases desirable.

The following is the general statement of the symptoms of bilateral hemiplegia:—"Bilateral hemiplegia is characterised by a spastic condition of the extremities, dating from or shortly succeeding birth; occasionally following the specific forms or an attack of convulsions. The legs are more involved than the arms; there is no wasting; no disturbance of sensation; the reflexes are increased. The mental condition is profoundly disturbed; the patients are wholly imbeciles or idiots, helpless in mind and body. Ataxic and athetoid movements of the most exaggerated kind may occur. Anatomically there is bilateral sclerosis or porencephalous defect of motor areas of the cortex cerebri."

Of spastic paraplegia the general features are here given:—

"Spastic paralysis of the lower extremities dating from birth, or coming on within the first years of life; absence of wasting; a condition of talipes equinus or equino-varus; adductor spasm, producing the 'clasp-knife rigidity;' the gait stiff, the patient walking on the toes, or there may be cross-legged progression. The intellect is usually impaired, though not, as a rule, so profoundly affected as in bilateral hemiplegia." Sensation is not affected, and there is no impairment of the functions of the bladder or rectum.

The symptoms are thus almost identical with those of spastic paraplegia of the adult, a condition usually associated with primary sclerosis of the lateral tracts of the cord. While this lesion has been supposed by some writers to cause the symptoms in children also, it is more probable that in them the defect is primarily in the brain. The grounds for this view are—(1) the frequent coexistence of symptoms pointing to brain lesion, as idiocy, nystagmus, &c.; (2) the similarity between these cases and those of bilateral spastic hemiplegia, a condition which is known to depend on disease of the motor areas of the brain with commonly descending degeneration—a similarity shown in their histories, and in the existence of transitional forms between the two conditions. There is only one case of infantile spastic paraplegia recorded in which a *post mortem* examination was made. In this there was a moderate degree of general cortical sclerosis; slight dilatation of ventricles; basal ganglia normal; cord firmer than normal with descending degeneration of lateral tracts.

True spastic paraplegia is apt to be confounded with the conditions described by writers on children's diseases as *idiopathic contraction with rigidity, tonic contraction of the extremities.* The chief difference between these conditions is given in a tabular form, as follows:—

Pseudo-paralytic Rigidity.	*Spastic Paralysis; di- and para-plegia.*
Follows a prolonged illness. Is often associated with rickets, laryngismus stridulus, and the so-called hydrocephaloid state.	Usually exists from birth. History of difficult labour, of asphyxia neonatorum, or of convulsions.
Begins in hands as carpo-pedal spasm; often confined to hands and arms.	Arms rarely involved without legs, and not in such a marked degree.
Spasms painful, and attempts at extension cause pain.	Usually painless.
Intermittent and of transient duration.	Variable in intensity, but continuous.

As regards the pathology of infantile hemiplegia, it appears that the most important conditions are—

"(1) Hæmorrhage, occurring during violent convulsions or during a paroxysm of whooping-cough.

"(2) Post-febrile processes: (*a*) emboli; (*b*) endo- and peri-arterial changes; and (*c*) encephalitis.

"(3) Thrombosis of the cerebral veins."

In the case of the diplegia and paraplegia, meningeal hæmorrhage occurring during birth plays a very large part in causing the injury of the motor area on which the paralysis depends. It would appear that actual sclerosis of the lateral tracts of the cord is not an essential condition of spastic rigidity, either in the adult or in children, although it is present in the majority of cases. It is pointed out that in future autopsies care must be taken to distinguish between degeneration and non-development of the lateral tracts.

The treatment of the conditions described in this book is not very hopeful. What can be done and what should not be done are fully given in the concluding pages.

This work, in our opinion, is a very valuable addition to the literature of children's diseases, and cannot fail to increase the deservedly high reputation which Professor Osler enjoys as well on this side of the Atlantic as in his own country.

ANTIPYRETICS.

IN an article on Antipyretics in the *Phil. Medical and Surgical Reporter*, Aug. 3, 1889, Dr. Ernest C. Helm advocates "letting a stream of cold water run over the inner surface of one or both wrists. This apparently simple expedient is a powerful antipyretic, and will require close and intelligent watching, for at the surfaces mentioned the large radial and ulnar arteries are so nearly subcutaneous that it is possible, by means of a long-continued stream of cold water, to speedily reduce the blood-heat to far below normal."

ÆTIOLOGY OF TUBERCULOSIS.

E. F. BRUSH, M.D., in a paper read before the New York Academy of Medicine, April 18th, 1889, states his belief that the only constant factor associated with tuberculosis is the inbred bovine species, and asserts that if a community is closely associated with inbred dairy cattle tuberculosis prevails.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By Sir Charles A. Cameron, M.D., D.P.H. (Cambridge); M.K.Q.C.P.I.; Past President and Professor of Hygiene and Chemistry, R.C.S.I.; President of the British Public Health Medical Society; Vice-President, Institute of Chemistry; Vice-President, Society of Public Analysts; Examiner in Sanitary Science, Cambridge and the Royal Universities; Medical Officer of Health, Dublin; Hon. Member, Societies of Hygiene, France, Belgium, Paris, Bordeaux, &c., &c.

THE VALUE OF CREOLIN, HYDRONAPHTHOL, AND SODIUM FLUOSILICATE AS GERMICIDES.

Dr. Charles J. Foote, of Newhaven, Connecticut, contributes a paper on the above subject to the September number of the *International Journal of the Medical Sciences*. Sodium fluosilicate and hydronaphthol have been employed as germicides, but their power as such in relation to that of other bodies has not hitherto been demonstrated. On the other hand, numerous experiments in relation to the germicidal properties of creolin have been made by Esmarch, Eisenberg, and others, and the results of a recent investigation in reference to the antiseptic properties of creolin, carried out by Dr. M. C. Blas, were given in the last Report on Public Health, published in the number of this Journal for June last.

Dr. Foote states that creolin is a germicide nearly equal in power to carbolic acid. This statement is quite true; indeed, owing to the readiness with which creolin mixes or emulsifies with water, it is for certain purposes preferable to carbolic acid. Foote's method consisted in determining the germicidal action of the three bodies

[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

above-mentioned in comparison with each other, and with some of the best known germicides—such as, for example, corrosive sublimate and carbolic acid. The bacteria operated on were the Bacillus typhosus, the Pneumococcus (Friedländer), the Streptococcus erysipelatosus (Fehleisen), the Staphylococcus pyogenes aureus, and those of decomposing beef bouillon, which, having been previously sterilised, had been for two weeks exposed to the air of the laboratory. Cultures of the staphylococcus were made in nutrient gelatine, and the other organisms were developed in the beef bouillon.

The following solutions were employed:—

Bichloride of mercury - - -	1 to 10,000
Do. Do. - - -	1 to 2,000
Carbolic acid - - - -	2 per cent.
Creolin - - - - -	do.
Do. - - - - -	1 to 1,000
Hydronaphthol, saturated aqueous solution	1 to 1,150
Sodium fluosilicate do. do.	1 to 120
Do. do. - - - -	1 to 1,000
Thymol, saturated aqueous solution -	1 to 1,200
Resorcin - - - - -	2 per cent.

One cubic centimetre of each antiseptic was placed in a sterilised test-tube with a sterilised forceps, and one cubic centimetre of one of the cultures was lowered into it by means of a sterilised pipette, the latter being carefully kept from touching the sides of the test-tube. The tube was then plugged with sterilised cotton, and at the end of half an hour and of two hours inoculations were made from its contents into tubes of sterilised beef bouillon, except in the case of the staphylococcus, when the inoculations were made with nutrient gelatine, rendered fluid by a prolonged boiling. A long platinum needle, terminating in a spiral, was used. In making the inoculations with it a good-sized drop could be transferred from the culture, which had been mixed with the germicide, to a test-tube of sterilised bouillon. The inoculated bouillon was placed in an incubator, and kept at a temperature of 104° F., and a watch kept for the first sign of cloudiness indicative of the development of bacteria. An equal quantity of fluid culture and antiseptic being used, the strength of the latter was reduced to one-half.

Two different strengths of the sodium fluosilicate and creolin solutions were used, in order that the limits of their power might be roughly determined.

As a check on the experiments, a 1 to 2,000 solution of mercury bichloride was used, since if any solutions inoculated with this preparation gave way, it would show that there was probably an error in the experimental method. The table shows the results obtained after exposure of one half-hour and of two hours :—

		Sodium fluosilicate, 1 to 2,000	Sodium fluosilicate, 1 to 240	Thymol, 1 to 240	Hydronaphthol, 1 to 2,300	Creolin, 1 to 2,000	Creolin, 1 per cent.	Bichloride, 1 to 20,000	Bichloride, 1 to 4,000	Resorcin, 1 per cent.	Carbolic acid, 1 per cent.
Staphylococcus pyogenes aureus	½ hour	Cloudy	Cloudy	Sterile	Cloudy	Cloudy	Sterile	Sterile	Sterile	Cloudy	Sterile
	2 hours	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Pneumococcus	½ hour	Cloudy	Cloudy	Sterile	Cloudy	Cloudy	Cloudy	Sterile	Sterile	Cloudy	Sterile
	2 hours	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Streptococcus erysipelatosus	½ hour	Cloudy	Cloudy	Sterile	Cloudy	Cloudy	Sterile	Sterile	Sterile	Cloudy	Sterile
	2 hours	,,	,,	,,	Sterile	,,	,,	,,	,,	,,	,,
Bacillus typhosus	½ hour	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Sterile	Sterile	Sterile	Cloudy	Sterile
	2 hours	,,	,,	Sterile	,,	,,	,,	,,	,,	,,	,,
Beef bouillon	½ hour	Cloudy	Cloudy	Sterile	Sterile	Cloudy	Sterile	Sterile	Sterile	Cloudy	Sterile
	2 hours	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,

The only germicides invariably sterilising each culture are the two solutions of mercury bichloride (1 to 20,000 and 1 to 4,000) and the 1 per cent. solution of carbolic acid. The tubes inoculated from mixtures of sodium fluosilicate (1 to 2,000 and 1 to 240), of resorcin, 1 per cent., and of creolin (1 to 2,000) invariably break down, from which the conclusion seems to be that fluosilicate, resorcin, and creolin (1 to 2,000) are of little value as germicides. Of the 1 per cent. creolin, thymol, and hydronaphthol, the thymol stands first, only one in ten tubes containing it giving way; 1 per cent. creolin comes next, and appears to be a good germicide, but not sufficiently strong to destroy the pneumococcus, though it did master the other micro-organisms. Hydronaphthol (1 to 2,300) proved efficacious in three out of ten trials. Placed in the order of germicidal power, the agents stand thus :—

1. Bichloride of mercury - - 1 to 20,000
2. Carbolic acid - - - 1 per cent.
3. Thymol - - - - 1 to 240
4. Creolin - - - - 1 per cent.
5. Hydronaphthol - - - 1 to 2,300
6. Sodium fluosilicate - - - 1 to 240
   Resorcin - - - - 1 per cent.
   Creolin - - - - 1 to 2,000

The author considers a 5 per cent. solution of carbolic acid the best for sterilising surgical instruments, and he recommends a 5 per cent. creolin solution as a vaginal douche, and a wash for the hands. He speaks favourably, too, of a 1 to 20,000 solution of mercuric chloride as a vaginal douche, and considers it a safe one. Legrand states (*Annales de Gynêcologie et d'Obstetrique*, June, 1889) that douches of bichloride of mercury, 1 to 2,000, followed by an intra-uterine douche of the same strength, apparently caused the death of a primipara. The *post-mortem* examination revealed the presence of mercury in the kidneys. Dr. Foote recommends, however, a solution ten times as weak. Of the germicidal properties of sodium fluosilicate and hydronaphthol Dr. Foote has formed a low estimate.

In a recent number of the *Deutsche medizinal Zeitung*, Dr. Jessner declaims against the use of carbolic acid and corrosive sublimate, on the ground that they are poisonous to man, and corrosive; on the other hand, he extols the creolins. He maintains that a 3 per cent. solution of creolin equals a 5 per cent. solution of carbolic acid. Creolin is not volatile, it is not poisonous in the quantities necessary for treatment of the human body, and it readily emulsifies; 250 grams administered to a cow, and 50 grams to a dog, produced no apparent injurious effect. Administered to man, in daily doses of 8 grams, it produced no injurious effects, but, on the contrary, had a beneficial influence on the digestive organs, decreasing the formation of intestinal gases, &c. A patient who accidentally drank 60 grams of creolin in a 5 per cent. solution experienced no ill effects from the misadventure.

The chief drawback to the use of creolin is its somewhat uncertain chemical composition. Prepared from creasote, its composition is complex and variable. In the June number of this Journal a complete analysis of a specimen of it is given. No doubt, if the consumption of the article increases at its present rate, it will be placed in the market at a definite composition and strength. Perhaps the excellent properties of this germicide are, in a measure, due to the variety of its constituents; for there are many cases where compounds are more efficacious than simple substances.

In Dr. Foote's paper hydronaphthol is described as a very inferior germicide, yet, in a recent number of the *Medical Review*, Dr. Roswell Park, of Buffalo, United States, extols its use in the form of an antiseptic jelly. He prepared culture media with various antiseptics, including carbolic acid, iodoform, creolin, sodium sulphocarbolate, perchloride of iron, &c., and found that of the various

antiseptic jellies so prepared that containing hydronaphthol almost alone prevented all growths. The strength used was 1 to 100. In iodoform jelly of equal strength many of the bacteria developed freely.

RELATION OF BACTERIA TO THE DIARRHŒA OF INFANCY.

Dr. L. E. Holt, in the *New York Medical Journal* for April 13th, 1889, states that in a study of the effects of micro-organisms upon the body, the nature of the organisms, the numbers in which they enter the body, and the vulnerability of the patient must be borne in mind. Speaking of the normal conditions of milk-fed infants, he concludes :—

"1. That the small intestine is acid throughout the upper two-thirds of its course.

"2. The source of the acid is the decomposition of the milk-sugar which is present here, though not in large amount.

"3. These is no decomposition of casein.

"4. All the casein and the greater part of the milk-sugar appear to be absorbed soon after they enter the intestine.

"5. Oxygen is absent, with the possible exception of a very small amount next the mucous membrane.

"6. But two varieties of bacteria have been constantly found: The *Bacterium lactis aërogenes*, which decomposes milk-sugar principally into lactic acid, and which is found chiefly in the upper part of the small intestine; and the *Bacterium coli commune*, occurring in great numbers in the colon and stools."

He considers that abnormal bacterial growth in the intestines eventuates in catarrhal inflammation, and that the increased secretion of mucus and serum, and probably formation of oxygen, tend to a further development of bacteria, with consequent increase of diarrhœa. An injurious effect produced by the bacteria is the decomposition in the food in the digestive organs which they induce. Ptomaïns result sometimes from these decompositions. As to prophylaxis, Dr. Holt recommends absolute cleanliness and the sterilising of milk.

ELIXIR OF LIFE.

During the middle ages the alchemists were engaged in two pursuits which have always been regarded by the immense majority of scientists as altogether visionary—namely, the elixir vitæ and the lapis philosophorum, or philosopher's stone. The latter was

believed to be a red powder which, mingled with the baser metals, caused them to assume the properties of the nobler ones—gold and silver. This substance, or one resembling it, was also supposed to be a remedy for all diseases, and a means for the indefinite prolongation of life. Magnetus, in his *Bibliotheca Chemica*, gives a formula, by Carolus Musitanus, for preparing it, and winds up his lengthy description as follows:—"Thus, friend, you have a description of the universal medicine, not only for curing diseases and prolonging life, but also for transmuting all metals into gold. Give, therefore, thanks to the Almighty God who, taking pity on human calamities, has at last revealed this inestimable treasure, and made it known for the benefit of all."

In modern times the chemist has succeeded in changing the forms of the elements of nature so as to practically convert them into new elements. The difference between ordinary phosphorus and its allotropes are more striking than the differences between silver and tin, or copper and gold. A great transmutation of several of the elements has been effected, and quite recently silver has been converted into a substance soluble in water. The elixir vitæ, however, has hitherto remained undiscovered; but we are told that the quest is by no means visionary: we are told so, too, by a man whose reputation as a physiologist is of the very highest—namely, Brown-Séquard. He has been for many years engaged in experiments, the results of which seem to indicate, to his mind at least, the possibility of indefinitely prolonging life. His *modus operandi*, briefly expressed, is the subcutaneous injection of blood from the spermatic veins of a young animal, together with the juice of the testicles. The latter was obtained by crushing the testicles of young animals in a mortar, macerating them in water, and filtering the cold infusion. The liquid which passed through the filter was clear, but contained some organic matter in solution, or suspended in very minute particles.

So far back as 1875 he found that grafts containing matter from the testicles had a striking effect on an old dog, restoring apparently all the friskiness and activity of its youth.

Brown-Séquard, now nearly an octogenerian, has experimented upon himself. He reports that his muscular strength has been much improved, and that many of the functions of his body which had become impaired had been improved, in some respects, to a remarkable extent. Brown-Séquard has communicated the results of his experiments to the Parisian Société de Biologie, some of the

members of which seem, on the whole, to be incredulous on the subject, and inclined to believe that the distinguished physiologist's imagination has run away with his judgment on this occasion. They consider that animals, in obedience to an inexorable law of nature, can exist only for a certain number of years, and that one might as well try to invent a "perpetual motion" machine as to discover an elixir of life. Brown-Séquard says, however, that other men have, as well as himself, been partially rejuvenated by subcutaneous injections of the juice of testicles. It seems that a Dr. Varliot has experimented with it on aged paupers, who, though unaware of the object of the experiment, stated that they felt invigorated and strengthened in body and mind by the injections.

Brown-Séquard is not the only believer in the possibility of the discovery of an elixir of life; Dr. Achille Malinconico is of the same opinion, and is now on the look out for it. He attributes all diseases, and death itself, to the malign influence of microbes. He has published his views in a pamphlet entitled "Trattato sulla Possibilitate della Prolongazione illimitata della Vita umana." In this tract it is argued that the normal state, decay, and death of the body, are not necessarily inevitably successive phases of development. There is a *bacillus of senility*, which, *if* discovered, might be eradicated root and branch. The disappearance of the human variety of the bacillus of senility would convert man almost into a race of terrestrial immortals, and the "Wandering Jew" would no longer be a myth. It is a curious phase in modern biology, this discussion as to the possibility of at least the prolongation of life by centuries. We have always regarded the death of the individual as an event which could not possibly be prolonged beyond certain well-ascertained limits. It is not long ago that Professor Huxley defined from biological and physiological data these limits to be 105 years, denying that Henry Jenkens, old John Parr, and the Countess of Desmond, could have attained to their reputed ages at death.

It is interesting in connection with the subject of the indefinite prolongation of life in that complex organism, the animal body, to consider the theory advanced by Dr. August Weismann. This author, in one of his essays upon heredity and kindred biological problems (translated from the German by E. B. Poulton, S. Schönland, and B. E. Shipley; Oxford, Clarendon Press, 1889), states that a unicellular organism is endowed with the potentiality of everlasting life; nothing but combustion, or other extreme injury, terminating its existence. The multiplication of this organism

by mere division is not a termination of its existence. Weismann divides organisms into two groups—unicellular and multicellular. The latter, he considers, are constituted of two kinds of cells—somatic and reproductive, the latter being the real centres of life. The somatic cells perish completely, but the reproductive cells go on in many cases for ever, preserving themselves by division, and practically remaining immortal. Accepting this theory, man of the present day contains in his organs of reproduction some of the germ-cells of his first parents. Brown-Séquard's idea seems to be to confer upon the multicellular organism of man the immortality of the unicellular organism by incorporating with the former the germ or reproductive cells which abound in the genital organs, Should this theory become accepted to even a very limited extent. we shall have a perpetual slaughter of the innocents. The price of calves and lambs will be enormously enhanced, and the pancreas—now so prized by the gourmand—of those animals will be at a discount. We shall have a new item in our bill of fare at dinner—juice of testicles, which, no doubt, will be freely partaken of by all the *viellards* who can afford such a luxury.

VITAL STATISTICS OF FRANCE.

In the reign of le Grand Monarque, Louis XIV., Frenchmen were more numerous than the men of any other European nationality; now they are exceeded by the Russians, Germans, Austro-Hungarians, and they will be in a few years no doubt by the British. A century ago there were two Frenchmen for every Briton; now the populations of France and the United Kingdom are nearly equal; 300,000 are annually added to the population of England, whilst the annual increase of the French population is less than 10,000, though the Britons emigrate largely and the Gauls stay at home. Between 1876 and 1881 the mean annual increase of population was 0·5 per cent., at which rate it would take two centuries to double the population. If France had the same density of population as England and Wales, the country would contain more than 70,000,000.

The vital statistics of France for 1888 have just been published in *Le Journal Officiel*, and are worth a careful study.

In 1886 there were 38,218,903 inhabitants of France. In 1888 the marriages were 7·2 per 1,000 persons, and the divorces were at the rate of 0·43 per 1,000 couples. The births in 1888 numbered 882,639—being nearly 17,000 less than in 1887—and were in the

ratio of 23·1 per 1,000 persons; the deaths numbered 837,867, and were in the ratio of 21·9 per 1,000 persons living.

The births exceeded the deaths by 44,722—a trifling difference in a population of nearly 40,000,000. The statistics show a diminution of marriages, births, and deaths, and an increase of divorces and illegitimate births. The illegitimate births constitute 8·5 per cent. of the total births, the proportion varying considerably in the different departments, rising to 25 per cent. in that of the Seine. The death and birth rates amongst the foreigners in France compare favourably with those of the native population.

There can be no doubt that Malthusian doctrines permeate French society; parents are anxious to leave their children in circumstances as prosperous as they are themselves, and they prefer to leave their property to two children rather than to a larger number. The serious political effects of this slow growth of the population do not seem to have occurred to the majority of the people, though they are undoubtedly one of the most patriotic nations of the world. In the great American Civil War superior numbers insured victory to the Northern States. In the wars waged by France against Germany in the eighteenth and earlier part of the nineteenth century, the French population outnumbered the German, but now the reverse holds good, and the numerical difference between the two rival races is yearly increasing.

Attention is at last been seriously directed in France to the stagnation of the population. Some of the Paris papers refer to it as the result of the general diffusion of atheistic ideas, the theory of the naturalists, and the general lowering of the moral level of the people. They complain that the suppression of the emblems of religion in the educational establishments of the State contributes towards the moral degradation of the young, eventuating in a diminution of marriage and an increase of illegitimacy. Many eminent scientists contrast the high death-rate of Paris with that of the larger city of London, and complain that, notwithstanding all that Pasteur and other *savants* are doing in France to discover and destroy the micro-organisms of the infective diseases, England in its practical hygiene is far ahead of France.

(*To be continued*).

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.K.Q.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF OBSTETRICS.

President—W. J. Smyly, M.D., F.K.Q.C.P.
Sectional Secretary—Andrew J. Horne, F.K.Q.C.P.

Friday, May 24, 1889.

The President in the Chair.

Death of Dr. Kirkpatrick.

Dr. MacSwiney, before the business of the meeting was proceeded with, moved the following resolution:—"The Obstetrical Section of the Royal Academy of Medicine in Ireland having learned with great regret the death of their colleague, Dr. J. Rutherfoord Kirkpatrick, a member of the Council and ex-President of the Section, desire to express their deep sorrow at that event, and to convey to Mrs. Kirkpatrick and family their sympathy and condolence with them in their great bereavement."

The resolution was passed in silence.

Exhibitions.

Dr. Bagot exhibited three specimens. The first was a myoma of the uterus which had been removed that morning in the Rotunda Hospital by Dr. Macan, the means of removal being supervaginal amputation. The second was an ovarian tumour which was removed on May 17th, and the third a small ovarian tumour which was removed on May 3rd. In the two last cases the patients had made perfect recoveries.

Mr. Horne exhibited an ovarian tumour, removed by Dr. Coppinger from a woman in the Mater Misericordiæ Hospital on the previous Saturday. The patient was a girl of seventeen or eighteen years of age. About six months ago while running she tripped over a stone trough, and fell, hitting her left side against it. On that day she did not feel

much inconvenience, but on the following day she had a good deal of pain in the left lumbar region, and was obliged to go to bed, where she remained three days. She sought no medical advice at that time. At the end of two months she began to suffer from a good deal of pain immediately under the left ribs, for which she sought medical advice. The doctor who examined her found a tumour lying immediately below the spleen. But what she remarked about the tumour was that when she stood up it fell down, but when she lay down in bed at night it rose up out of the pelvis, immediately under the left ribs. She had pain only at night, which prevented her from sleeping. There was a good deal of doubt at that time as to whether it was an ovarian tumour or a displaced or cystic kidney. Under the circumstances Dr. Coppinger determined to make an incision in the abdomen so as to see the tumour, which was not very much bigger than an orange. He first made an incision of about two inches long. The tumour was then high up under the left ribs, and he (Mr. Horne) had to shove it down to the wound, where it was punctured by Dr. Coppinger, and removed without difficulty. It had a very large pedicle, which had allowed it to move freely over the abdomen.

On the Diagnosis and Treatment of Small Submucous Fibro-myomata of the Uterus.

Dr. Byrne having taken the Chair,

The President said:—So long as the rule was generally accepted that in every case of severe uterine hæmorrhage not connected with existing pregnancy the cervix should be dilated and the cavities explored with the finger, the diagnosis of these tumours presented no difficulty; but since the introduction of the curette has rendered this painful and somewhat dangerous preliminary in the larger number of cases superfluous, it becomes of much interest to ascertain whether these new growths can be diagnosticated without previous dilatation. Four cases are detailed showing that this was the case. The necessity for dilatation was indicated partly by the condition of the cervix, partly by feeling the new growths by sound or curette. In my opinion, dilatation of the cervix uteri was necessary only in order to remove small tumours, polypi, or portions of retained ovum. Large tumours should not be removed per vaginam, and hæmorrhage alone was not an indication. The method of dilatation which I now adopt is to commence with iodoform gauze, and, if necessary, complete the process with Hegar's dilators. The iodoform gauze is easily employed, and may be left *in situ* for three or four days, and is therefore especially adopted to the wants of the busy practitioner. In all the cases the tumours were removed by means of Schultze's spoon forceps. With this instrument diseased tissue alone is attached, and with ordinary care no harm can be done; enucleation, on the other hand, is much more dangerous and difficult.

Dr. J. Byrne said the great difficulty was to dilate the external os, and after that had been done there was as great difficulty in dilating the internal os. Iodoform gauze was a great improvement as a gynæcological appliance for the purpose.

Dr. MacSwiney said the paper had dealt with several points of great importance to the specialist. Dr. Smyly objected, apparently on good grounds, to the practice of frequently dilating the os or cervix, except where he recognised a submucous, fibroid, or other polypus, or where there was ovular membrane, and he wished to know how would Dr. Smyly determine that the hæmorrhage was due to a tumour or some other condition?

Dr. Kidd observed that Dr. Smyly had said that some authorities preferred the knife to Hegar's dilators. In the case of a woman who had not borne children, if the knife was used, the difficulty of the operation would be enhanced by the hæmorrhage. He said one of the advantages of Hegar's dilators was that they did not occasion anything like the amount of hæmorrhage that would occur if the cervical canal and os were opened with a knife sufficiently to admit of fingers being introduced into the uterus.

The President (in reply) said that the difficulty there was sometimes of distinguishing between incomplete abortion and the existence of fibroid tumours, was one of the things that had induced him to write the present paper. In the fourth of the cases that he had narrated, the woman had been fourteen months married, had had an abortion, and her uterus was large and flabby; and, therefore, it was natural to suppose that the case was one of incomplete abortion. As to treatment in such cases, if the abortion took place before the fourth month, he would not use the dilator, but would simply scrape and wash out the interior of the uterus, and then inject it with either perchloride of iron or liniment of iodine. If the placenta had formed, the best course was to dilate and remove the placenta with the finger. If the curette was used, and did catch something, that was what would enable them to diagnosticate that it was a tumour and not a case of incomplete abortion; and then the uterus should be dilated, in order to get the growth away. He did not think the use of the knife in such cases had been much in vogue in Dublin. It was common to split the cervix as far as the vaginal junction; but the division of the internal os with a knife was not very popular. He had no doubt that there would be more hæmorrhage when a knife was used than with a dilator, but he had had no experience of the two cases. Hegar's dilator was an excellent instrument when the os was already somewhat dilated; but if the cervix was rigid, it was very apt to cause laceration of the cervix, and in such a case it was better to begin with iodoform gauze, which was a very simple thing to use.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, September 7, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Aug. 17.	Aug. 24.	Aug. 31.	Sept. 7.		Aug. 17.	Aug. 24.	Aug. 31.	Sept. 7.
Armagh -	20·7	5·2	25·8	25·8	Limerick -	18·9	21·6	14·8	17·5
Belfast -	26·3	24·3	24·5	25·7	Lisburn -	14·5	9·7	0·0	29·0
Cork -	20·1	17·5	13·0	17·5	Londonderry	25·0	26·7	23·2	16·0
Drogheda	4·2	8·5	16·9	12·7	Lurgan -	35·9	5·1	25·7	10·3
Dublin -	23·6	23·9	26·0	17·9	Newry -	24·6	21·1	10·5	10·5
Dundalk -	34·9	8·7	8·7	8·7	Sligo -	9·6	48·1	9·6	38·5
Galway -	13·4	26·9	10·1	10·1	Waterford -	20·8	32·4	34·7	23·2
Kilkenny	16·9	0·0	8·5	50·7	Wexford -	8·6	17·1	4·3	17·1

In the week ending Saturday, August 17, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 16·6), was equal to an average annual death-rate of 19·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·8 per 1,000. In Glasgow the rate was 20·7, and in Edinburgh it was 15·4.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 23·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·0 per 1,000, the rates varying from 0·0 in Kilkenny, Drogheda, Wexford, Sligo, and Lurgan, to 8·7 in Dundalk—the 8 deaths from all causes registered in the last-named district comprising 2 from diarrhœa. Among the 116 deaths from all causes

registered in Belfast are 3 from whooping-cough, 2 from simple continued fever, 6 from enteric fever, and 23 from diarrhœa. The 31 deaths in Cork comprise 1 from scarlatina and 2 from diarrhœa. The 14 deaths in Limerick comprise 1 from scarlatina, and 2 from whooping-cough. Among the 14 deaths in Londonderry are 2 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 239—125 boys and 114 girls; and the deaths to 165—86 males and 79 females.

The deaths, which are 2 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 23·6 per 1,000. During the first thirty-three weeks of the current year the death-rate averaged 25·3, and was 4·4 below the mean rate in the corresponding period of the ten years 1879–88.

Thirty-five deaths from zymotic diseases were registered, being 4 over the number for the preceding week, and 3 above the average for the 33rd week of the last ten years. They comprise 1 from measles, 4 from whooping-cough, 1 from diphtheria, 3 from enteric fever, 23 from diarrhœa (17 of which were of children under 5 years of age), 2 from dysentery, &c.

One case of small-pox was admitted to hospital during the week.

The number of cases of enteric fever admitted to hospital is 13, being 8 over the admissions for the preceding week, and equal to the admissions for the week ended August 3. Nine enteric fever patients were discharged, 3 died, and 43 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, August 10.

Only 2 cases of measles were admitted to hospital, being equal to the admissions for the preceding week. Seven convalescents from measles were discharged, and 10 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

No case of scarlatina has been admitted to hospital within the past three weeks. Two cases of typhus were admitted this week. Seven cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

Sixteen deaths from diseases of the respiratory system were registered, being 2 below the number for the preceding week, and 3 under the average for the corresponding week of the last ten years. They comprise 7 from bronchitis, 5 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, August 24, the mortality in twenty-eight large English towns, including London (in which the rate was 15·8),

was equal to an average annual death-rate of 17·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·1 per 1,000. In Glasgow the rate was 20·9, and in Edinburgh it was 14·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·1 per 1,000, the rates varying from 0·0 in eight of the districts to 6·6 in Belfast—the 107 deaths from all causes registered in that district comprising 1 each from measles, scarlatina, whooping-cough, and diphtheria, 2 from simple continued fever, 3 from enteric fever, and 20 from diarrhœa. The 27 deaths in Cork comprise 2 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 187—104 boys and 83 girls; and the deaths to 170—91 males and 79 females.

The deaths, which are 9 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 25·1 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first thirty-four weeks of the current year the death-rate averaged 23·9, and was 5·6 under the mean rate in the corresponding period of the ten years 1879-88.

Thirty-four deaths from zymotic diseases were registered, being 1 below the number for the preceding week, but 3 above the average for the 34th week of the last ten years. They comprise 1 from measles, 1 from scarlatina, 2 from whooping-cough, 4 from enteric fever, 24 from diarrhœa (21 of which were of children under 5 years of age), 1 from dysentery, &c.

The case of small-pox admitted to hospital in the previous week still remained under treatment. No fresh case was admitted this week.

The number of cases of enteric fever admitted to hospital is 12, being 1 under the admissions for the preceding week, but 7 over the admissions for the week ended August 10. Fourteen enteric fever patients were discharged, and 41 remained under treatment on Saturday, being 2 below the number in hospital on Saturday, August 17.

Five cases of measles were admitted to hospital against 2 admissions in the preceding week; 8 measles patients were discharged during the week, and 7 remained under treatment on Saturday, being 3 under the number in hospital at the close of the previous week.

No case of scarlatina has been admitted to hospital during the past four weeks. Six cases of typhus were admitted this week. Only 3 cases of scarlatina and 12 of typhus remained under treatment in hospital on Saturday.

Nineteen deaths from diseases of the respiratory system were registered, being 3 above the number for the preceding week, and equal to the average for the corresponding week of the last ten years. They comprise 9 from bronchitis and 8 from pneumonia or inflammation of the lungs.

In the week ending Saturday, August 31, the mortality in twenty-eight large English towns, including London (in which the rate was 15·1), was equal to an average annual death-rate of 16·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·6 per 1,000. In Glasgow the rate was 19·2, and in Edinburgh it was 16·2.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 22·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·4 per 1,000, the rates varying from 0·0 in nine of the districts to 7·0 in Belfast—the 108 deaths from all causes registered in that district comprising 1 from scarlatina, 3 from whooping-cough, 1 from simple continued fever, 5 from enteric fever, and 21 from diarrhœa. The 11 deaths registered in Limerick comprise 2 from whooping-cough, and 1 from diarrhœa. The Registrar of Lisburn district remarks—"Several cases of scarlatina during the week of a mild type."

In the Dublin Registration District the births registered during the week amounted to 185—81 boys and 104 girls; and the deaths to 180—92 males and 88 females.

The deaths, which are 7 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 26·6 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·0 per 1,000. During the first thirty-five weeks of the current year the death-rate averaged 25·4, and was 4·0 under the mean rate in the corresponding period of the ten years 1879–88.

Thirty-nine deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years, and 5 over the number for the week ended August 24. They comprise 1 from typhus, 1 from whooping-cough, 5 from enteric fever, 25 from diarrhœa (20 of which were of children under 5 years of age), 1 from dysentery, &c.

Twenty-two cases of enteric fever were admitted to hospital against 12 admissions for the preceding week. Seven enteric fever patients were discharged, 1 died, and 55 remained under treatment on Saturday, being 14 over the number in hospital at the close of the preceding week.

Only 1 case of typhus was admitted, being 5 under the number for the

preceding week—11 typhus cases remained under treatment in hospital on Saturday.

The hospital admissions for the week include also three cases of scarlatina, of which disease no cases had been received during the preceding four weeks. The total number of scarlatina cases in hospital on Saturday was only 6.

Twenty-three deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten years, and 4 over the number for the week ended August 24. They comprise 13 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 7, the mortality in twenty-eight large English towns, including London (in which the rate was 14·0), was equal to an average annual death-rate of 16·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·5 per 1,000. In Glasgow the rate was 21·2, and in Edinburgh it was 12·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 20·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in six of the districts to 6·6 in Belfast—the 113 deaths from all causes registered in that district comprising 1 from scarlatina, 1 from typhus, 2 from whooping-cough, 1 from diphtheria, 3 from simple continued and ill-defined fever, 4 from enteric fever, and 17 from diarrhœa. The 13 deaths in Limerick comprise 2 from scarlatina. The Registrar of St. Mary's District, Drogheda, remarks :—"Whooping-cough is very prevalent in my district at present, but only one death has yet occurred."

In the Dublin Registration District the births registered during the week amounted to 174—100 boys and 74 girls; and the deaths to 126—57 males and 69 females.

The deaths, which are 48 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 18·6 in every 1,000 of the estimated population. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 17·9 per 1,000. During the first thirty-six weeks of the current year the death-rate averaged 25·2, and was 4·1 under the mean rate in the corresponding period of the ten years 1879–88.

Twenty-two deaths from zymotic diseases were registered, being 17 under the number for the preceding week, and also 17 below the average for the thirty-sixth week of the last ten years. They comprise 1 from measles, 1 from typhus, 2 from whooping-cough, 10 from diarrhœa

(all the victims of which were children under 5 years of age), 1 from dysentery, &c.

The number of cases of enteric fever admitted to hospital is 14, being 8 under the admissions for the preceding week. Fifteen enteric fever patients were discharged, and 54 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, August 31.

Three cases of measles were admitted to hospital, against 1 admission for the preceding week, and 5 admissions for the week ended August 24. Two patients were discharged, and 5 remained under treatment in hospital on Saturday, being 1 over the number at the close of the preceding week.

Only 2 cases of scarlatina and 1 case of typhus were admitted to hospital during the week. Six cases of the former and 11 of the latter disease remained under treatment in hospital on Saturday.

The small-pox patient admitted to hospital during the week ended August 17 was discharged in the course of this week. This was the only case of the disease in hospital at any time during the present year.

Twenty-five deaths from diseases of the respiratory system were registered, being 2 over the number for the preceding week, and 5 in excess of the average for the corresponding week of the last ten years. They consist of 12 from bronchitis, 9 from pneumonia or inflammation of the lungs, and 1 from croup.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N. Long.* 6° 15′ *W., for the Month of August*, 1889.

Mean Height of Barometer,	29·852 inches.
Maximal Height of Barometer (on 31st, at 9 a.m.),	30·262 „
Minimal Height of Barometer (on 21st, at 3 p.m.),	29·145 „
Mean Dry-bulb Temperature,	57·6°.
Mean Wet-bulb Temperature,	54·9°.
Mean Dew-point Temperature,	52·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·395 inch.
Mean Humidity,	83·6 per cent.
Highest Temperature in Shade (on 1st),	71·8°.
Lowest Temperature in Shade (on 25th),	46·4°.
Lowest Temperature on Grass (Radiation) (on 25th),	40·1°
Mean Amount of Cloud,	60·2 per cent.
Rainfall (on 22 days),	5·747 inches.
Greatest Daily Rainfall (on 19th),	1·942 inches.
General Directions of Wind,	N.W., W., W.S.W.

Remarks.

August, 1889, proved a wet, cold, and stormy month. Rain fell on as many as 22 days—the fall amounting to 1·300 inches on the 10th,

and to 1·942 inches on the 19th. The mean temperature was 1·2° below the average, and strong or squally winds between S.W. and N.W. prevailed on no fewer than 14 days. As regards temperature conditions were almost identical with those observed in August, 1888.

In Dublin the mean temperature (58·6°) was decidedly below the average (59·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 57·6°. In the twenty-four years ending with 1888, August was coldest in 1881 (M. T. = 57·0°), and warmest in 1871 (M. T. = 62·0°). In 1885, the M. T. was only 57·1°; in 1879 (the "cold year"), it was 57·7°; in 1887, it was 60·3°; and in 1888, it was 58·2°.

The mean height of the barometer was 29·852 inches, or 0·052 inch below the average value for August—namely, 29·904 inches. The mercury marked 30·262 inches at 9 a.m. of the 31st, and fell to 29·145 inches at 3 p.m. of the 21st. The observed range of atmospherical pressure was, therefore, 1·117 inches—that is, a little more than an inch and one tenth. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 57·6°, or exactly the same as in August, 1888, and 0·7° below the value for July, 1889; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 57·5°, or 1·4° below the average mean temperature for August, calculated in the same way, in the twenty years, 1865–84, inclusive (58·9°). The arithmetical mean of the maximal and minimal readings was 58·6°, compared with a twenty-three years' average of 59·8°. On the 1st the thermometer in the screen rose to 71·8°—wind, S.W.; on the 25th the temperature fell to 46·4°—wind, N.N.W. The minimum on the grass was 40·1° on the latter date. The rainfall was 5·747 inches, distributed over 22 days. The average rainfall for August in the twenty-three years, 1865–87, inclusive, was 2·766 inches, and the average number of rainy days was 15·3. The rainfall, therefore, was more than twice the average, and the rainy days were also considerably in excess of the average. In 1874 the rainfall in August was very large—4·946 inches on 18 days—and in 1868 also 4·745 inches fell on, however, only 13 days. On the other hand, in 1884, only ·777 inch was measured on 8 days. In 1887, 1·520 inches of rain fell on 16 days, and in 1888, 1·270 inches on 12 days.

High winds were noted on as many as 14 days, and attained the force of a gale on at least two occasions—namely, the 6th and 20th. The atmosphere was foggy on the 31st. Thunder was heard on the 7th and 11th, and lightning was seen on the 30th. Temperature reached or exceeded 70° in the screen on only two days—or 8 fewer than in August, 1887, and one more than in August, 1888.

On Thursday, the 1st, heavy showers began to fall at intervals, and continued to do so during the two next days.

Very unsettled showery weather prevailed throughout the week ending Saturday, the 10th, and from Monday evening until Wednesday morning the wind was fresh or strong in force. Rain fell in drenching showers, and occasional thunder and lightning accompanied the showers. The barometer stood relatively high in France and Germany, while a series of atmospherical depressions of some intensity passed in an easterly, or north-easterly, direction across the British Isles, the North Sea, and Scandinavia. Hence the prevalence of squally south-westerly (S. to W. and N.W.) winds and heavy thunder showers. In Dublin Sunday and Friday were tolerably fine days. Heavy showers fell on Monday and Tuesday. There was a moderate gale from W. to N.W. on Monday night. At 4 p.m. of Wednesday a local easterly sea breeze caused dense rainclouds to form, and at 5 30 p.m. a flash of lightning and clap of thunder were followed by torrents of rain—the measurement from the shower being ·450 of an inch in less than half an hour. On Saturday rain again fell in large quantities over the city for several hours. In Dublin the mean height of the barometer was 29·800 inches, pressure ranging from 30·077 inches at 9 p.m. of Wednesday (wind, W.), to 29·526 inches, at 9 p.m. of Saturday (wind, W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57·6°. The mean of the daily highest and lowest shade temperature was 59·1°. The thermometer rose to 68·6° in the shade on Wednesday, and fell to 52·0° on Tuesday. Rain fell on six days to the large amount of 2·341 inches—the maximal fall in 24 hours being 1·300 inches on Saturday (wind, S.E.). Thunder and lightning occurred on Wednesday.

A cyclonic distribution of atmospherical pressure and changeable weather held during the second week (11th–17th inclusive). On Sunday, the 11th, a complex area of low pressure lay over England and the North Sea—in Ireland, northerly winds and sharp thunder-storms were felt, and the weather was everywhere unsettled. By Tuesday morning, the centre of the system, which had become much deeper, had reached the Baltic, the barometer reading only 29·06 inches at Wisby, in Gothland. The weather was now fine in Ireland, but in the course of Tuesday night a new disturbance arrived off Donegal, accompanied by a heavy downpour of rain. Fresh or squally S.W. to N.W. winds prevailed until Thursday evening. On Friday afternoon another depression approached Ireland from the Atlantic, causing heavy showers and a renewal of squalls—first from S.W. and then from W. In Dublin the mean height of the barometer during the week was 29·836 inches, and pressure ranged from 30·085 inches, at 9 a.m. of Tuesday (wind N.N.W.), to 29·572 inches, at 9 p.m. of Friday (wind, S.W.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58·3°. The mean of the daily highest and lowest readings of the screened thermometers was 59·4°. The highest shade temperature was 69·8° on Friday; the lowest was

50·2° on Tuesday. Rain fell on four days to the amount of ·539 inch—the heaviest fall in 24 hours being ·290 inch on Tuesday.

Exceedingly broken and unseasonable weather held throughout the third week (18th–24th inclusive). Large quantities of rain fell in all parts of the United Kingdom, France, and Scandinavia, and westerly (S.W. to N.W.) gales of unusual severity for August were reported from the coast stations. On Sunday, the 18th, the isobars ran in almost straight lines from W. to E. across the British Isles, the North Sea, Denmark, and Northern Germany—the resulting westerly wind was high, but no heavy rainfalls occurred. During the remainder of the week, however, a series of deep atmospherical depressions passed northeastwards across Ireland and Scotland, and to these the gales and rains were due. By Tuesday morning about 2 inches of rain had fallen over the greater part of Ireland, and a similar downpour had begun in Scotland. On Wednesday another depression travelled quickly across the North of Ireland and of England, renewing the bad weather. The remainder of the week was cold, showery, and squally, with strong N.W. winds. In Dublin the mean height of the barometer was 29·659 inches, the readings varying between 29·970 inches at 9 a.m. of Friday (wind, W.N.W.), and 29·145 inches at 3 p.m. of Wednesday (wind, W.) The mean temperature at 9 a.m. and 9 p.m. was 55·4°. The mean of the daily extreme temperatures was 56·0°. The shade thermometers rose to 62·6° on Sunday and Tuesday, and fell to 48·4° on Friday. Rain fell every day, the total measurement being 2·574 inches, of which 1·942 inch was registered on Monday.

A marked improvement in the weather took place in the last week (25th–31st inclusive), at all events over the greater part of the country. In the northwest and north of Ireland and in Scotland, indeed, bad weather prevailed from Tuesday to Friday, owing to the passage of a storm-centre northeastwards across those districts. But in the east and south of Ireland and in England very little rain fell, and a return of summer temperatures was observed. On Friday the thermometer rose to 83° in London and to 82° at Oxford and Cambridge. The wind was N.W. on Sunday and Monday. It then backed to W. and S.W., and freshened considerably, under the influence of a depression which skirted the west coasts of Ireland and Scotland, causing gales and rains as noticed above. On Friday the wind died down, and a light easterly breeze and clear sky succeeded a calm foggy morning on Saturday. In Dublin the mean height of the barometer was 30·129 inches, pressure ranging from 29·942 inches at 9 a.m. of Sunday (wind, N.N.W.), to 30·262 inches at 9 a.m. of Saturday (wind, calm). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57·0°. The arithmetical mean of the daily maximal and minimal temperatures in the screen was 57·8°. The shade thermometers rose to 69·5° on Wednesday, having fallen to 46·4° on Sunday.

Rain fell on two days to the amount of only ·020 inch—·010 inch on Monday, and ·010 inch on Friday. There was a smoke fog in the city on Saturday morning, and sheet lightning was seen on Friday night.

The rainfall in Dublin during the eight months ending August 31st has amounted to 18·893 inches on 134 days, compared with 4·455 inches on 96 days during the same period in 1887, 17·264 inches on 121 days in 1888, and a twenty-three years' average of 17·515 inches, on 128·1 days.

At Greystones, Co. Wicklow, the rainfall in August, 1889, was 4·410 inches, distributed over 17 days. Of this quantity, 2·050 inches fell on the 19th, ·520 inch on the 21st, and ·440 inch on the 2nd. Since January 1, 20·090 inches of rain have fallen at Greystones, on, however, only 83 days.

At Carrickmines, County Dublin, the rainfall in August was 5·641 inches, on 21 days; and since January 1, 20·483 inches have fallen at that station on 121 days.

PERISCOPE.

COMPETITIVE EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY, INDIAN, AND NAVAL MEDICAL SERVICES.

THE following papers were set at the Examination held in August, 1889 :—*Anatomy and Physiology.*—Sir Joseph Fayrer. Monday, 12th August, 1889—from 10 a.m. till 1 p.m. 1. Describe the fibula, the origin and insertion of muscles connected with it; and the ligaments which enter into the formation of the ankle joint. 2. Describe the origin, course, distribution, and anatomical relations of the great sciatic nerve. 3. Describe the small intestine from the pylorus to the ileo-cæcal valve, giving an account of its structure, anatomical relations, vascular supply, and innervation; as also of its functions and the processes carried on in different portions of the length of the tube. 4. Describe the parotid and submaxillary glands, giving an account of their anatomical relations, structural innervation and blood supply, the functions they perform, and the chemical and physiological character of the fluid they secrete. 5. Describe the dissection by which you would expose the subclavian artery, mentioning the parts of importance which would be also exposed, and their anatomical relations. *Surgery.*—Mr. Pollock.—Monday, 12th August, 1889—from 2 p.m. till 5 p.m.—1. Describe the symptoms by which syphilitic eruptions may be distinguished from those of a non-syphilitic origin, and the treatment to be adopted in the different varieties of the former. 2. Describe the dislocations common to the elbow joint, the complications which frequently attend them, the modes of reduction, and subsequent treatment of the limb. 3. A patient is the subject of femoral hernia. Describe

the symptoms indicative of its becoming strangulated, the operation for its relief, and the general and local after-treatment. 4. What are the usual causes of retention of urine in old age, and the best measures for its relief? What subsequent conditions are likely to arise which require the attention of the surgeon? 5. Describe the symptoms which would indicate fracture of the base of the skull, and the treatment to be pursued under the varying circumstances of such an injury. 6. A patient is the subject of a punctured wound in the groin, attended by arterial hæmorrhage, what treatment should be adopted in such a case? *Medicine.*—Sir William Aitken.—Tuesday, 13th August, 1889—from 10 a.m. till 1 p.m. 1. A case for commentary—In January, 1884, a lad, aged twenty, began to have spasms (described as "cramps") in the left thumb and forefinger. These spasms or cramps consisted of "clonic" opposition of these named digits, occurring about twice a day for three successive months. The first severe fit happened in March, 1884. Spasm spread up the arm, and the patient fell. He had a second fit in January, 1885; and another severe fit commenced a series of them, occurring once or twice a week, until admission to hospital on December 4th, 1885. The character of the fits was almost always the same. They began by "clonic" spasmodic opposition of the thumb and forefinger of left hand; the wrist next, and then the elbow and shoulder were flexed clonically, then the face twitched and the patient lost consciousness. The hands and eyes then turned to the left, and the left lower limb was drawn up. The right lower limb was next attacked, and finally the right upper limbs. Paralysis of the left upper limbs frequently followed a fit. At frequent intervals every day the patient's thumb would commence twitching, but progress of the convulsion could often be arrested by stretching the thumb or applying a ligature on it. In February and March, 1886, the twitching frequently commenced in the face, but again in April the thumb was the most frequent seat of origin of the fit. On admission his condition was as follows:—(1) As to *Power of Motion.*—The grasp of left hand recorded 45, that of his right 85. He could perform all movements with the left upper limb; but those of the left hand were enfeebled. The left thumb was frequently in a state of rigidity, alternating with clonic spasm, a condition which could easily be induced by manipulating the thumb. (2.) As to *Sensation*—There was no affection save loss of muscular sense in the left thumb. (3.) As to *Deep Reflexes*—They were exaggerated in the left upper limb. The patient frequently had severe headache, beginning at the occiput and shooting forward, especially towards the right parietal region. (4.) As to *Optic Discs*—They appeared to be very pink, a condition of physiological hyperæmia. Under these circumstances, on June 22nd, 1886, a tumour of a tubercular character was removed from the brain by a surgical operation, and by July the patient had recovered, having had no fits since the operation.

In commenting on the nature of the above case, explain what is meant by (1) "Spasm;" (2) "Tonic spasm;" (3) "Clonic spasm;" (4) "Co-ordinated spasm;" (5) "Jacksonian epilepsy;" (6) explain the method of analysing the convulsive symptoms in this case which point to lesion in a definite region of the brain; (7) define by an ink line on the accompanying brain charts the motor region of the cerebral cortex, and mark with a X on the same chart the probable site of the tumour. (*Be so good as to attach the chart so marked, by its gummed surface, to your written answer to this question.*) 2. Explain the meaning of lithæmia, and nature of the ailment it designates; describe the symptoms and treatment of the condition. 3. Discuss the pathology of typhlitis and perityphlitis as regards:—(1) The origin; (2) the course of these affections. Describe how these conditions are diagnosed from other affections; and lastly give details as to treatment. 4. Acquired diseases of the heart in children (as distinguished from congenital affections) present certain peculiarities of practical importance. Write what you know regarding these peculiarities as to—(1) the parts of the heart involved, and character of the pulse in children; (2) the causes of the lesions and the principles which ought to guide the treatment. 5. Discuss the principles by which you would be guided as to the use of acids or alkalies in the treatment of chronic dyspeptic conditions; and as regards the time for the administration of such remedies. *Natural Science.*—Dr. Allman.—Tuesday, 13th August, 1889—from 4 p.m. till 6 p.m. *Zoology.*—1. Enumerate in their order from without inwards, the fundamental germinal layers of the vertebrate embryo. Which of these gives origin to the brain and spinal cord, and which to the vascular system? 2. What is meant by a water vascular system? Name one or more examples of its occurrence in the animal kingdom. 3. Name the animal defined by the following characters:—Notochord persistent; spinal chord not presenting at its anterior extremity a distinct brain; respiratory organ in the form of a dilated pharyngeal sac; the place of the heart taken by pulsatile vascular trunks. *Botany.*—4. By what anatomical characters may such flowerless plants as present a distinct stem and foliage be divided into two main groups? Give one or more examples of each of these groups. 5. What phenomenon in the life of plants admits of the closest comparison with the respiration of animals? 6. Refer to its natural order a plant with the following characters and give one or more examples:—Corolla gamopetalous, with the lobes imbricate in æstivation, bilabiate; calyx with five, more or less, united sepals, persistent; stamens inserted on the tube of the corolla, didynamous; ovary, superior two-celled, with the placentæ in the axis; fruit, a two-valved capsule; seeds numerous, albuminous. *Physics.*—7. A stone dropped into a well strikes the water at the end of three seconds, at what depth in feet is the surface of the water from the mouth of the well? 8. At what angle

must a ray of light be incident on a plane reflecting surface, in order that the reflected ray be at right angles with the incident ray? 9. To what degrees of Fahrenheit's thermometer do the following degrees of the centigrade respectively belong:—100°, 96°, 29°.

TREATMENT OF HYPERTRICHOSIS.

Dr. Arthur Jamison (*Practitioner*, July and August, 1889) gives a series of cases in which he has successfully treated hypertrichosis by the local use of sodium ethylate.

MUMMIFICATION OF UMBILICAL CORD.

Mr. Frederick W. Lowndes, M.R.C.S., reports (*Liverpool Medico-Chirurgical Journal*, July, 1889) an important case of mummification of $2\frac{1}{2}$ inches of an umbilical cord, the half inch nearest the navel being perfectly fresh, and argues that such an appearance is (in spite of Casper's dictum) of great value in determining live birth.

BACTERIA.

Dr. Edward P. Davis (*Medical News*), in a lecture on digestion, divides bacteria into (*a*) benign and adjuvant, and (*b*) malignant and destructive. [Wanted a chemical antiseptic that will differentiate between the benign and malignant.—Ed.]

A GOOD EXAMPLE.

"The Michigan State Legislature has appropriated 50,000 dols. for the erection of a new hospital at Ann Arbor. The citizens have increased that amount by issuing bonds for 25,000 dols."—*Phil. Med. and Surg. Rep.*, Aug. 3, 1889.

DIGESTION IN INFANCY.

Max Einhorn (*New York Medical Journal*, July 20, 1889) gives the result of a large series of experiments on the time required for the digestion of human milk, cow's milk, cow's milk and water, and some "infant foods." He finds that after two hours, mother's milk, and cow's milk, both plain and diluted, have entirely disappeared from the stomach. Malted food, Carnrick's food, and Mellin's food, are here arranged in the order of their digestibility, but none of them were generally digested in two hours. Cow's milk diluted gave small fine flakes like those of human milk, and quite different from the thick lumps into which cow's milk, undiluted, curdled. Dr. Einhorn considers human milk as by far the best food for the human infant, cow's milk diluted with water, milk sugar being added, as the best substitute, and all so-called "infants' foods" as being very inferior. If "foods" are given, over two hours must be allowed between meals to prevent overloading the stomach.

The author gives an important caution. Free hydrochloric acid may not be found, and yet acid may not be required, as the hydrochloric acid, as secreted, forms with the milk acid albuminates, and although the degree of acidity is not diminished, Günzburg's test for free hydrochloric acid will prove negative.

THE HOSPITAL MANAGER.

"At the annual ceremony . . . of the Institution the medical staff is mentioned as worthy of commendation for its labor, but this is usually done as an afterthought, and as evincing a determination to give credit to all impartially. It is apt to take some such form as this: 'In this connection it is but simple justice to express our appreciation of the faithful and efficient service rendered by our Superintendent and the physicians of the visiting and house staff. . . . . To each one the managers offer their sincere thanks for the faithful co-operation which has so greatly lightened the labors and responsibilities of the managers.' Ah, a pretty wit hath the hospital manager! By dint of attending a monthly meeting of an hour's duration, or by the experience gained from a few figures and a glance or two at reports, the manager gains a knowledge of the medical needs of hospital patients more extensive than any medical education or experience could afford him."—*New York Med. Journal*, June 15th, 1889. [The above extract, with a "u" inserted in "labor," and "manager" altered to "committee," might apply to some cases at this side of the Atlantic.—Ed.]

OINTMENT FOR CARCINOMATOUS ULCERS.

Dr. Richardson (*Asclepiad*) recommends the following ointment for painful carcinomatous ulcers:—℞. vaselini, ℥i.; chloroformi, ℥ii.; morphinæ, gr. 4, ft. ungt. To be applied twice daily.

MALARIAL KERATITIS.

At the July meeting of the American Ophthalmological Society, Dr. Kipp, of Newark, N.J., reported 130 cases of malarial keratitis in his locality.

ACUTE CORYZA.

Dr. R. Abbe (*New York Medical Journal*, June 15th, 1889) recommends, in painful acute coryza, a mixture of two grains of cocaïn and a drachm of boric acid.

SUCCESSFUL CORNEAL GRAFTING.

Dr. Francis Valk has succeeded in grafting the cornea of a rabbit on the eye of a woman, aged forty-four years, who from gonorrhœal ophthalmia had opaque cornea. With a special trephine Dr. Valk removed

a circle of the rabbit's cornea, and trephining a piece of the same size from the woman's cornea substituted the portion trephined from the rabbit. The grafted cornea is clearing up, and the woman appreciates light, and can distinguish colours.—*Phil. Med. and Surg. Reporter*, June, 1889.

IODOFORM.

Iodoform, according to Dr. Van Arsdale (*Annals of Surgery*, March, 1889), destroys ptomaïns, and is inert to bacteria; therefore he recommends that the chemical, when used as an antiseptic dressing, should be washed with a solution of corrosive sublimate.

SURGICAL TREATMENT OF INVETERATE TIC DOULOUREUX.

Robert Abbe, M.D., (*New York Med. Journal*, Aug. 3, 1889) gives an interesting series of cases, in which, by a modification of Carnochan's operation for complete resection of the second branch of the fifth pair from the foramen rotundum to the infraorbital foramen, with the removal of Meckel's ganglion, he has given lasting relief in tic douloureux of an inveterate type. The author makes an incision of only $1\frac{1}{4}$ inches in length over the infraorbital foramen, and uses a gouge instead of a trephine for penetrating the antrum.

DIURESIS.

Lauenstein, of Berlin, has noticed that washing out the stomach produces diuresis. One patient voided fifty-five ounces of urine the day following the washing out of his stomach.—*Phil. Med. and Surg. Rep.*, June 8, 1889.

ECZEMA.

Wiss (*L'Union Médicale*, No. 139) recommends the following ointment for eczema, especially of the hands:—Resorcin, 1 part; vaselin, 20 parts.

HERNIA INTO THE FORAMEN OF WINSLOW.

Mr. Frederick Treves, in the *Lancet*, reports a case of hernia into the foramen of Winslow.

FRIEDREICH'S DISEASE.

An interesting isolated case of Freidreich's disease is reported by Mr. Hinshelwood in the *Lancet* of the 28th September. The patient is twenty-four years of age. He enjoyed good health until three years ago, when he first observed that he was unsteady on his legs. The disease has latterly made marked progress, and all the characteristic symptoms are present. [Friedreich's first cases were published in 1863—about one hundred and fifty cases are on record. The literature of

the subject has been fully given by Dr. Griffith, of Philadelphia, in the October number of the *American Journal of the Medical Sciences.* He collected an account of one hundred and forty-three cases, of whom eight-six were males and fifty-seven females. They were divided amongst seventy-one families, but in twenty-four instances only one child was affected.—Ed.]

ANTISEPTICS.

During 1886 and 1888 Drs. Dakin and Boxall, in the *Transactions of the Obstetrical Society*, published a timely warning against the antiseptic craze that present-day man-midwives suffer from. The warning is reiterated by Dr. Legrand, who, in a paper read before the Anatomical Society of Paris, brought forward a case in which corrosive-sublimate, carbolic acid and boric acid douching produced gingivitis, salivation, colic, dysentery, and other tortures, until death gave the unfortunate patient rest after five days' torment.

CHLOROFORM.

Dr. Lauder Brunton, as the representative of the *Lancet*, leaves on the 4th inst. for Hyderabad, where he will be the guest of His Highness the Nizam, for the purpose of testing the results of the Hyderabad Chloroform Commission.

TONSILLITIS.

Dr. Sahli (*Lancet*, 28th of September) recommends antifebrin in seven and a half grain doses as a remedy capable of giving great ease in cases of acute tonsillitis, enabling the patient to swallow food, stimulants, or medicine.

COCAINE POISONING.

Dr. Vinogradoff reports a case of cocaine poisoning from a hypodermic injection of twenty-two grains given to allay the pain of a rectal operation. Death occurred from asphyxia, in spite of tracheotomy and prolonged performance of artificial respiration.—*Lancet*, 28th September.

TARTAR EMETIC.

In the report of the Hyderabad Medical Commission on the work done in the Nizam's Government Hospitals, Surgeon-Major Lawrie warmly advocates the use of small doses of tartar emetic in enteric fever.

TEMPERANCE LITERATURE.

"Inebriety," Dr. Norman Kerr's well-known book on the temperance question, has been translated into Russian by Professor Kovalevsky, of Kharkoff University.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Vapour Cones.

The advancing season and approach of winter reminds us to draw the attention of the Profession to the carbon cones and cases invented and patented a year or two ago and manufactured by the Chemical Carbon Company, Limited, of London and Basingstoke. These "vapour cones," as they are called, were exhibited in the Museum at the Glasgow meeting of the British Medical Association in August, 1888, and attracted at the time a great deal of attention.

We have had several opportunities of trying the cones in practice, and feel no hesitation in expressing the opinion that in them an important addition has been made to the therapeutical armoury of the physician and of the surgeon. The cones which we have used have been those of chloride of ammonium, terebene, and carbolic acid—all of which are likely to prove of great use in the treatment of catarrhal affections, particularly when they are of a chronic nature. But the cones we have mentioned are only three of a series which also includes such remedial agents as pure oxygen gas, thymol and lavender, carbolic acid and lavender, menthol, purified creasote, stramonium, sulphur, and subchloride of mercury. The last-named contains 40 grains of mercurous chloride, and is intended for a mercurial bath in syphilitic affections of the skin and bones.

Each cone is attached to an earthenware stand, and is enclosed in a conical cap or case of stiff brown paper or cardboard. An external paper-wrapper has full directions for use printed upon it. The outside paper or cardboard case can be used as an extinguisher when the cone has burnt down to the base. It will thus be seen that nothing has been overlooked to make this ingenious invention as complete and efficient as possible.

Compressed Tabloids.

Among the most recent additions to the list of compressed tabloids prepared by the firm of Burroughs, Wellcome, and Company, of Snow-hill Buildings, London, are tabloids of antipyrin (5 grains in each), salicin (5 grains in each), papaïn (2 grains in each), besides their now celebrated "Thirst Tabloids," of compressed bicarbonate of sodium, citric acid, white sugar and gum arabic, flavoured with essence of lemon. Mr. H. M. Stanley, the explorer, and other travellers performing long journeys where water is scarce or bad, or not obtainable, have found in these thirst tabloids a great boon.

All these tabloids are neatly dispensed in well-corked bottles with filters of cotton-wool, and they will be found in every way convenient and portable.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

NOVEMBER 1, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*On the Treatment of Acute Intestinal Obstruction due to Collections within the Lumen of the Bowel.*[a] By W. THORNLEY STOKER, M.D., F.R.C.S.I.; Surgeon to the Richmond Hospital.

THERE is no branch of surgical treatment on which the modern practice of free operation, as fostered by antiseptics, has had a more healthy and invigorating effect than on that dealing with obstruction of the intestine.

The old methods of diagnosis have been supplemented by the possibility of seeing and feeling the structures which are at fault, in an open peritoneum, and without added risk to the patient; and the advantages of early and intelligent treatment by operation have been bestowed with a free hand by the same great agency.

But while I claim this for the recent practice of operation, I am of opinion that the tide of favour which has set so strongly in the direction of the early use of the knife has, in the particular class of cases with which I now propose to deal, risen rather beyond high-water mark, and we may presently expect something of a subsidence. This occurs with most new procedures, and is wholesome because necessary—a natural adjustment to the mean level which follows the rise and fall of opinion and practice.

[a] Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, June 7, 1889.

The class of cases is that in which the obstruction is due to the accumulation of fæces, or flatus, or both, in the intestine—the condition known as ileus paralyticus. It will at once appeal to the experience of surgeons when it is said that such cases are the most difficult we have to deal with, and the most unfavourable in their results when operated on. The diagnosis is a matter of the most extreme uncertainty; the seat of obstruction is often indefinite, and the great meteorism, and the long delay which has so often taken place while the case has been neglected or ill-treated before it presents itself for surgical advice, renders the duty of the surgeon most difficult and the result of his labours very often unfavourable. Who, that has a large experience, does not know the difficulty of forming a judgment as to the time when operation should be undertaken, the anxiety attending the selection of a particular procedure, and the danger and impediment offered during operation by the protrusion of large masses of distended intestine—and who, if he confesses it, does not know the fatality attending laparotomy in such instances? And yet laparotomy in these cases is, as a rule, the only open-eyed and logical proceeding when minor methods have failed.

While my remarks will have reference to conditions which may forbid operation, or to methods which may render it unnecessary, I wish to guard myself against being supposed to be an opponent of the early and free use of the knife in suitable instances, and to state definitely my opinion in favour of timely operation. My position is simply this: that in the *furor operandi*, which has attacked so many of us of late years, we have been too prone to neglect or overlook methods of treatment which are comparatively safe and may be thoroughly efficient, and to subject patients to the risk of a laparotomy or other operation which might be avoided by less perilous treatment. There can be no doubt as to the dangers of timid delay, but the longer we observe cases of intramural obstruction the more we must be impressed with the difficulty and uncertainty of pronouncing a particular instance to be one in which delay should not be made, or in which treatment surbordinate to operation might not be safely or successfully followed. There are no cases in which the golden "I have seen" is of more value, or which more forcibly argue that "all is but lip-wisdom which wants experience." We see one case which appears hopeless get well with simple treatment, and another about which our alarms are not excited die rapidly. This uncertainty in the prognosis of

intestinal obstruction is a very grave difficulty, even when contrasted with the most uncertain of other complaints, and is one which indicates prompt treatment no less than cautious opinion. There is a condition which may be called "intestinal shock" which is dependent on sudden obstruction, and is capable of producing rapid death without any assignable physical cause for dissolution beyond the indefinite and corporeally unrecognisable one called "shock." I will never forget the case in point of a vigorous young man who died in the Richmond Hospital two years ago. He was the subject of a congenital rupture; it became suddenly irreducible. On the day of his admission he had no symptoms of urgency; there was no tension of the hernia; he had presented himself at hospital not because he was in distress, but because he was uneasy at his inability to reduce the rupture. His bowel appeared, to use an old term, to be "incarcerated." Operation was deferred until the next day, as his symptoms were so slight that it was not thought to be called for or even justified. He became collapsed in the night, and in the morning he was dead. His body was, with the exception of the rupture, perfectly healthy; the imprisoned bowel was not even congested deeply; he had died of "intestinal shock." With such memories and such opinions it would be difficult to argue for delay as a general practice, but unquestionably it may, as an exceptional one, be followed with advantage in cases of ileus paralyticus.

The minor methods of treatment, which it is my purpose to discuss, are as follows:—

1. Local applications.
2. Opium.
3. Pressure and massage.
4. Purgatives.
5. Belladonna.
6. Tapping.
7. The enema.

As regards the value of these means, it is generally immaterial as to what is the sequence of clinical events in the particular case you have to deal with. The immediate condition is a bowel distended by fæces and flatus, and whose walls are too paralysed by over-distension to make any effectual efforts at expulsion, unless assisted by artificial means. It is true that the collection in the lumen of the bowel is often due to a weak and atonic condition of its muscular coats, and a consequent failure of due peristaltic

action. But whether the atony is primary and a cause of the collection, or secondary and consequent upon the presence of fæcal and flatulent accumulation, is not a matter which materially affects the treatment. The importance of succeeding in relieving obstruction by the use of one of these means is too evident to require argument. and will, at all events, appeal to the judgment of those who believe that laparotomy in intramural obstruction with much meteorism is an extremely fatal proceeding. Such cases are seldom seen by the surgeon until late in their history, when operation is very dangerous, and measures such as have been referred to as minor, become major in their significance. So far as these minor treatments are concerned, there is nothing to be said of them in connection with their application to cases where the use of the knife may be resorted to that does not apply to them, but more strongly in those instances where operation is dangerous or unfit. The latter unfavourable examples of obstruction, when intramural in character, are rendered more formidable by the presence of extreme tympanites or obesity, and operation placed among such unfavourable surroundings that added importance is given to any measure which may help to avoid it. What, for instance, can be more embarrassing to surgical effort than to be forced to perform a laparotomy on a very obese or tympanitic subject; because, owing to the very conditions which render the operation unfavourable, the uncertainty of diagnosis forbids an extra-peritoneal operation, while the intra-peritoneal one, so admirable under other circumstances, becomes extremely fatal where there is great distension of the bowel.

1. *Local Applications.*—Experience teaches the avoidance of such local medication as is capable of producing irritation. Turpentine, mustard, and other rubefacients applied to the skin are productive of little or no benefit, and are instruments of harm. They inflame the skin, increase the suffering they are intended to allay, mask signs in deeper parts, and place the tissues in the worst possible condition for operation if such be required.

A plain hot-water application, or simple poultice, can do no harm, and may be useful in relieving pain and stimulating peristaltic action. Beyond such means it is seldom advisable to go.

2. *Opium.*—Concerning the use of this drug in acute obstruction, I have nothing to say that is favourable. None of the advantages which attend its employment in many cases of chronic constipation

seem to follow its use here. There is not much difficulty in understanding this if we remember that its chief therapeutic effect in some cases of constipation is due to its action in relaxing spasm—a physiological effect of little value in acute cases.

Half the cases of acute obstruction which come under surgical care have been drenched with opium, and, as a rule, with no effect beyond relieving pain, at the cost of masking symptoms and reducing the patient to a condition which, by adding to the difficulties of diagnosis, materially increases his danger. While it would be extreme to say that opium should never be employed in these cases, it is safe to assert that it is more often productive of harm than good, and that its general omission would be less hurtful than its usual employment.

3. *Pressure and Massage.*—In the very early stages of obstruction, and where the condition is due to the paralysis dependent on flatulence, or to the presence of fæcal accumulation, the support of a well-applied binder is of service. It often gives relief from pain, and, by supporting the bowel, prevents greater distension, and stimulates its efforts to contract. Massage carefully employed to the abdomen is a useful agent in assisting pressure, and is a powerful means of stimulating the natural efforts of the gut to rid itself of its load by contraction and peristalsis. Deep kneading and *tapotement*, alternating with friction in the direction of the colon, will be found most useful.

4. *Purgatives.*—I think we are too much afraid of using purgatives in the early stages of obstruction. Where the obstruction is a paralytic one, due to flatus or fæces, the propriety of employing them cannot be denied; and even where the coats of the bowel are surgically engaged their danger is overrated. The use of saline purgatives in the treatment of peritonitis is a matter in point, and shows how much undue fear formerly existed as to motion, even in those extreme abdominal cases where inflammation existed. Where they fail to do good, their power of evil is over-estimated. The moderate mechanical effect produced by even powerful cathartics is so comparatively slight that it need not be much dreaded, particularly when the resource of operation lies conveniently behind. The selection of a particular purge is one about which every surgeon will please himself. Personally I have been led by my colleague, Dr. Gordon, to confide most frequently in calomel, administered in repeated doses, and given either with or without belladonna.

5. *Belladonna* is a drug which is not sufficiently valued in these cases. Its action is understood, and its administration logical. It relieves pain, while it does its work. It finds its chief use in those cases of peristaltic paralysis due to tympanites or fæcal accumulation, and, as these are most often seen in very obese persons, and are attended by great meteorism—both conditions which render operation extremely dangerous—this drug is often an alternative with the knife. It should be given in full and repeated doses, and pressed until it shows its constitutional effect by producing either dilated pupil or dryness of the throat. The latter symptom is that most usually seen. It is perfectly useless employing this drug unless it be administered to its full extent. It may generally be combined with calomel. It is remarkable that whereas the tolerance of belladonna when given in chronic obstruction is very variable and its employment requires caution, it is extremely well borne in acute cases. The weak and impeded heart which is present in so many cases of acute obstruction is materially aided by the use of belladonna, which is a most excellent cardiac stimulant. In illustration I may refer to two recent cases, in both of which a most extreme condition of danger from obstruction was present, in both of which operation would have been most probably fatal, and in both of which belladonna was absolutely successful.

The first case was that of a gentleman whom I attended last January, in consultation with Dr. Neary, of Howth. He was a man of middle age, of great obesity, with a great amount of abdominal fat, and with a weak heart. He was a gross feeder on rich and strong food. His attack had followed on an enormous meal of roast pork, and was evidently due to fæcal accumulation.

When he came under observation he was cyanotic, with a weak, rapid, irregular pulse, extreme dyspnœa, congestion in the bases of both lungs, temperature 101·2°, scanty secretion of urine, enormous distension of abdomen, and a general appearance of impending death. It was a case in which I would not have performed a capital operation, as I was sure it would have proved fatal. He had been treated by moderate purgation, enemata, and other appropriate measures, before I saw him, but the slight discharge which resulted had been productive of no benefit. He was ordered ½ gr. ext. of belladonna and 1 gr. of calomel every third hour. In about thirty hours his bowels began to act and continued to discharge vast quantities of fæces and flatus until he was convalescent. In two days he took nine pills of the above composition, and six of half

the strength, so that he received in forty-eight hours 12 grs. of calomel and 6 of ext. of belladonna. In this case the effect of the belladonna was as marked on the heart as on the muscular coats of the intestine.

The second case was one I saw lately with Dr. J. Kenny in the Hospital of the North Dublin Union. The patient was a spare, gaunt, middle-aged man, who had been without any action of his bowels for twelve days. The attack had come on suddenly, and had some resemblance in its mode of incursion to intussusception. We, however, came to the conclusion that it was a case of paralytic distension. All previous treatment had failed to give relief. The distension was of the most extreme character, and attended by vomiting. As it was impossible to localise the obstruction, laparotomy was the only operation that could be entertained, and as from the meteorism it promised to be one of very great danger, we resolved to give the man the chance of further medical treatment, particularly in view of the fact that he was suffering comparatively little distress. He got $\frac{1}{2}$ gr. each of ext. belladonna and calomel every third hour, and in twenty-four hours his bowels were acting copiously, and he made a rapid recovery.

6. The next treatment is *Tapping*. In cases of paralytic distension, where there is great meteorism and apparently not much fæcal accumulation, it is indicated. It is most often justified, and most usually successful in spare persons, in whom the outlines of the distended intestines can be seen. The transverse colon is the part generally indicated for puncture, and the best rule about the use of the trochar is, if possible, not to precede its employment by purgatives. For if the bowel is filled with thin fæcal matter as a result of the ineffectual use of these drugs, the cannula becomes clogged, the escape of gas impeded, and the operation rendered of doubtful value. It is wonderful how small an escape of flatus will permit enough contraction of the bowel to induce action of its muscular coats, and give the fillip which produces a healthy peristaltic action. I have generally employed a cannula with a circumference of 5 mm., and furnished with a blunt stylet to remove obstruction if it should become clogged subsequent to its introduction. One case in illustration :—

In January, 1888, I saw, in consultation with Dr. Alexander Patton and Dr. Quinan, an elderly, insane gentleman, suffering from extreme abdominal distension and constipation. As usual in the cases of insane persons, no account of his condition could be

given by the patient, and no localisation of the obstruction made out. The condition was extreme; the only major operation admissible, owing to the uncertain nature of the case, was laparotomy.

The mental condition of the gentleman and the great tympanites were arguments against opening his peritoneum, and as other treatment had failed, as the case seemed one of paralytic distension, and as his state was urgent, we decided to tap his transverse colon, which could be seen through his attenuated abdominal wall. A quantity of flatus and a little fluid fæces escaped, his bowel soon showed a disposition to undertake its normal contractions, substantial motions were passed, and a rapid recovery was made.

As between the employment of belladonna and of the cannula, *ceteris paribus*, the use of the needle is generally indicated in spare persons, and where flatus predominates over fæces; while in obese persons, in whom the intestine is deep and difficult to localise, or where much fæcal matter is present, the needle is not likely to be of service, and belladonna may do much good.

7. *The Enema.*—As Dublin is specially credited with the introduction of a modification of the injection-tube, which has enjoyed a long repute, it is desirous that she should not be backward in the investigation of its real value, on which a doubt may be thrown. The use of the "long tube" was first proposed by Mr. James O'Beirne, one of the surgeons to the Richmond Hospital in the year 1833, when he published a book entitled "New Views of the Process of Defecation," which he dedicated, with extraordinary infelicity, to the then Lord Lieutenant. This book is a model of all a book should not be. Tedious, clumsy, and discursive in style, overloaded with ill-considered and unproven conjectures, it is, from its fulsome dedication to its windy appendix, a tiresome and overrated production. That it has been so long accepted, and its teaching endured, is unaccountable. At all events a false god has been set up for professional adoration; it is called the "long tube," and its rubric is Mr. O'Beirne's treatise.

Let us see what he teaches. From a medley of impossible physiology and clumsy pathology, we may select a few of his propositions for consideration:—(1) That a tube 18 inches long can be passed through the rectum and sigmoid flexure into the descending or even the transverse colon; (2) that considerable force may be used, because the bowel is so muscular that it is not likely to sustain rupture; (3) that the principal obstruction is likely to be the

tight closure of the bowel, owing to the contraction of its muscular fibres—that when you have pushed the tube in for 8 or 9 inches and find resistance suddenly give way, you have slipped through this colic embrace; and (4) that if the tube gets too soft with the warmth of the bowel you are to stiffen it by plunging it in cold water.

Now let us examine these few points *seriatim*. Can a tube 18 inches long be passed into the bowel without turning on itself? I do not believe the tube goes through the sigmoid flexure. From observations made not only on the living but on the dead body, I am convinced that if such an extraordinary chance as the passage of a tube through the sigmoid flexure ever does occur, it is but the one exception in ten thousand which proves the rule. By careful pumping, fluid can be made to ascend to almost any distance into the colon, particularly if gravity be called to aid by the adoption of the knee-and-head, knee-and-elbow, or lateral abdominal positions, and on this point O'Beirne's advice is sound enough; but when more than 8 or 10 inches of tube pass the anus, either a flexion has taken place, or the sigmoid flexure is pushed before the tube. These doubts are not singular. Mr. Treves, who has given it most intelligent consideration, expresses himself strongly to the same effect, and relates a case in which a surgeon, having triumphantly demonstrated that the tube must be in the transverse colon, from the position in which its end could be felt through the abdominal wall, subsequent *post-mortem* examination showed an imperious stricture of the sigmoid flexure. I have seen the same thing happen in cancerous occlusion of the rectum.

The umbilicus is the sun of a system into various parts of which the poetic fancies of surgeons have carried the end of the tube. As the last-named writer says:—"It is of interest to note that many surgeons still cling, in a spirit of simple and trustful faith, to the 'long tube.' They appear to regard it as a kind of fetish, as an inanimate thing to be evoked as a last resource when in dire distress. History tells us that this remarkable pipe has been passed many feet into the colon, that it has reached the transverse colon, and that it has even found its way into the cæcum. I can only say that the adventures of this tube and the anatomy of the colon do not agree; there is a discrepancy somewhere, and, of course, it may be that the bowel is at fault. After many patient trials upon many dead bodies, I have not yet succeeded in passing

this interesting pipe beyond the sigmoid flexure. Several feet of it have disappeared within the anus, and its tip has been felt about the umbilicus, and even the right iliac region, but the mobile sigmoid flexure has explained it all, and beyond that loop the good tube has not passed."

Second of O'Beirne's propositions: Is it true that the bowel is so muscular that considerable force may safely be used in introducing the tube? It is a dangerous theory, and has done infinite harm. If the bowel is not more often actually ruptured by vigorous disciples of Mr. O'Beirne, it is because our bountiful mother Nature generally orders that the tube shall turn against the pelvic wall, where it may bruise the unhappy gut against the bone, but cannot completely penetrate it. No force is permissible, safe, or even useful in introducing an enema pipe. By judicious pumping, and by the due regard to gravitation, the fluid can be introduced without dangerous force. It is appalling to think of the risks run and the damage done by the muscular apostles of the long tube. Life is, no doubt, sacrificed in this way by a rupture of the bowel, and it is to be wished either that O'Beirne had never written his dangerous book, or that some of his followers could learn a little anatomy and a good deal of caution.

Third: Is the principal obstruction, with the exception of impacted fæces, likely to be the tight embrace of a tube half an inch in diameter, by the muscular coat of the sigmoid flexure? Does any educated anatomist who has studied the intestine believe that this portion of a healthy bowel is capable of any such closure? Is the sudden disappearance of the resistance when the tube is in for 8 or 9 inches, due, as O'Beirne says, to the pipe slipping through this colic embrace? Is it not more likely due to either the knuckling of the tube on itself, or to its end slipping over the brim of the pelvis, and carrying the gut before it.

The fourth of Mr. O'Beirne's propositions—namely, that if the tube is too soft it is to be hardened by immersion in cold water—is of a piece with the others, and will cry its own condemnation without any criticism.

In fine, the long tube is a mere convenience; it is easy to use, and clean in its application, but there is no good to be got in the way of introducing fluid into the bowel that cannot be effected as well with a pipe eight or ten inches long, while the latter is safer in unskilful or ignorant hands. The only good thing to be said for O'Beirne's book is, that although it taught much in error, it did

some service in teaching, however inaccurately, that the injection pipe was an important instrument, and one that should not always be relegated to nurses, but employed by the most educated hands.

I have no desire to exercise iconoclastic propensities by upsetting the traditions of a respectable antiquity, but it is a duty to speak strongly in condemnation of this fetish, because it is an engine of extreme danger, and one whose power of evil cannot be too soon recognised by the younger generation. The sooner we disencumber our surgical minds of its false issues the better for our patients.

The enema is a most useful agent, and when properly employed a safe one. Let the material introduced by it be bulky, simple, and unirritating, let gravity and anatomical knowledge of the bowel be called to our aid, let tenderness supplant vigour, and intelligence replace length of tube, and we shall use the enema with more effect and with less danger.

The consideration of major operative measures are not within the compass of this communication, which does not deal with treatment antecedent to operation, such as laparotomy or colotomy, or suited for employment where these operations are forbidden. The points I desire to emphasise are these:—

1. That local treatment calculated to irritate the abdominal wall or produce rubefaction, is calculated to do harm, and that only soothing and emollient applications should be employed.

2. That opium should not be generally or incautiously employed, and that it is capable of being a most dangerous agent.

3. That pressure and massage may be of material value, particularly if employed early.

4. That while purgatives can only be sources of danger in cases where the obstruction is seated in or external to the wall of the bowel, they may be employed with freedom in intramural obstruction, and should, if used, be used actively and for a short time only.

5. That belladonna, pushed to a full constitutional effect, is a most powerful agent.

6. That tapping the bowel in cases of meteorism is a comparatively safe proceeding; is capable of overcoming many cases of distension, and may be used more freely than at present; and—

7. That the full value of the enema can be got by the use of a short tube, and that the long tube has obtained a credit it never deserved, and is, in incautious hands, a dangerous and sometimes a destructive agent.

If I have spoken truisms, attacked traditions, or insisted on

trivialties, it is because the first are often forgotten, the second often too well remembered, and neglect of the last too often destructive.

ART. XV.—*The Disappearance of Cardiac Murmurs.*[a] By M. A. BOYD, M.D.; Physician, Mater Misericordiæ Hospital.

IN drawing attention to the disappearance of cardiac murmurs, I wish it to be understood my remarks have reference to the murmurs of organic endocardial origin. I purposely exclude all murmurs of pericardial or exocardial origin, which, as all practical physicians are aware, are the forms of so-called murmurs which are prone to disappear; and also all those of endocardial origin known as functional or anæmic murmurs, which are equally fugitive in character. I know many authorities hold that an organic murmur produced either by changes in the valves, or of the orifices they close, or of the appendages attached to them, once established, is never cured, but few of them venture to assert dogmatically that these murmurs never disappear as time goes on. Their disappearance, temporarily, from constitutional causes, or from alteration in the cardiac walls themselves, is not even regarded by many authorities as a proof of their absolute cure, and this applies especially to murmurs produced by chronic endocarditis, as opposed to those produced or appearing in the course of an acute attack. In fact, a well-established murmur produced from chronic endocarditis engaging an orifice disappears, according to such authorities, only during the time preceding dissolution and, under ordinary circumstances, is always permanent.

In acute endocarditis, however, we often find murmurs become developed from organic changes in the valves, or the orifices they guard, leading to corresponding changes in the cavities of the heart, indicating thereby their organic nature, which frequently disappear after weeks or months of undoubted existence; and as some cases of this character have come under my notice, I beg to draw attention to them. I may, in general, state that the murmurs produced during acute endocarditis that engage an orifice or its valves I have met with as disappearing in this way have all been those associated with regurgitation, and I cannot say that I have met with an instance of a murmur due to constriction of any

[a] Read before the Section of Medicine of the Royal Academy of Medicine in Ireland.

orifice disappearing once the symptoms indicating this condition have become undoubtedly developed. The reason of constrictive murmurs so seldom disappearing is obvious. The constrictive murmur in its pronounced form is generally a late condition in many instances of the mischief that led to or produced regurgitation from inflammation of the valves, or their attachments, or of the walls of the ostium in their neighbourhood. We all know how frequently constrictive murmurs of both mitral and aortic orifices follow from previously-existing regurgitative ones.

Many will, I know, meet my assertion that murmurs of regurgitation (undoubtedly organic) do disappear with the remark that these murmurs are not always due to organic changes either in the valves or orifices, and are frequently the result of inadequate adaptation, or of atonic muscular action, or of alteration in the cavities of the ventricles with which they are associated. I grant all this, and while recognising the fact that regurgitation at any orifice may be due to a variety of causes, constitutional as well as local, a number of cases exhibiting all the symptoms of undoubted permanency in character make their appearance during an acute rheumatic attack, or subsequent to it, and yet ultimately disappear, leaving the heart as free from traces of their presence as the lung would be free from any traces of disease after an attack of uncomplicated croupous pneumonia. Such cases are not by any means few, and most of them occur in connection with the mitral orifice; but I have also met with cases of aortic regurgitation where a permanent disappearance of the murmurs took place. I have also come across cases of tricuspid regurgitation where the murmur disappeared, to return again in course of time, so that I cannot adduce these as examples of permanent disappearance.

We are all familiar with the condition of disappearance of mitral systolic murmurs occurring during the course of acute rheumatism, or of recurring rheumatic attacks, which show no trace of their existence, when, the temperature reaching its normal standard and the arthritic symptoms disappearing, the general health becomes established, and this would be borne out by the prevalence in medical literature of the expression, "A slight blowing systolic murmur was present," showing the significance attached to such a murmur in the mind of the writer, as if it were one of no consequence, and likely to disappear. The general opinion, I think, with regard to mitral regurgitative murmurs in acute rheumatism is that they generally get well, and their disappearance in at least

15 per cent. of the cases so attacked is not too high a percentage of recovery to assign to them.

In looking over the literature of cardiac disease, one is struck with the meagre details furnished as to the ultimate disappearance of murmurs once established; and in no authority on the heart, that I consulted, did I find any statistics on the subject, most of them directing their attention apparently to well-established murmurs from chronic endocarditis. Allusion is made by some to the causes of disappearance, especially of mitral regurgitative ones, during the course of a rheumatic attack. Niemeyer especially assigns the origin of those that disappear during rheumatism to "ataxy of the papillary muscles," and Rosenstein to the "failure of the muscular wall towards the close of life," and, if his theory is correct, "that the intensity of the blood current is the cause of the intensity of the murmur and of its production," we can understand how a failing ventricle would be incapable of producing a murmur at an orifice where regurgitation was permitted.

Mitral murmurs should disappear, speaking theoretically, more frequently than aortic ones, owing to their being almost entirely the result of rheumatic endocarditis, which tends to get well, and not, as in the majority of aortic cases, the result of diseases of advanced life, such as atheroma, alcoholism, or gout, causes which do not disappear as age advances.

Mitral disease shows itself most frequently in the young, aortic disease in advanced life.

In all the cases of disappearance of murmurs of mitral insufficiency that I have met, the subjects were all young, and as one case which I met some years since made an impression on me, I will give the particulars of it:—

Case.—E. S., a young girl, aged twelve, suffering from pain and swelling in the region of the left hip joint, with febrile symptoms, and apparent lengthening in the limb of that side, was regarded by me as developing the early symptoms of morbus coxæ. Leeches applied to the neighbourhood of the joint, with counter-irritation afterwards, relieved the pain, and all further trouble referable to the hip disappeared. She then developed symptoms of pericarditis without showing any symptoms of further arthritic engagement. I then learned there were some symptoms of rheumatism in the family, though both father and mother were free from it. The pericardial attack, accompanied by lymphy exudation, ran its course, and at the end of the attack I was for the first time able to detect the presence of a mitral systolic murmur which continued all

through until convalescence was established and all febrile symptoms had disappeared. The girl was allowed to go about, with the usual precautions as to exercise. At the end of a few months I was again in attendance on her for a recurring attack of rheumatism; this time with engagements of the joints, and evidently fresh endocardial symptoms, with a pronounced mitral regurgitative murmur still present. She recovered from this attack with a hypertrophied left ventricle, and suffered afterwards from dyspnœa on the slightest exertion. As I looked on the murmur, from the alteration in the ventricle and the dyspnœa present, as an organic mitral murmur, I gave an unfavourable opinion to the friends as to the possibility of its getting better. This girl was from time to time under my care for the next two years, and I satisfied myself on each occasion I saw her of the undoubted presence of the mitral insufficiency, and of the hypertrophy of the left ventricle being present. I then lost sight of the case, notes of which I had carefully taken at the time, and I heard from the parents she was enjoying good health at school, that menstruation had come on, and that she ceased to complain of all cardiac troubles. On her return I was anxious to ascertain the condition of her heart, and she was brought to me for examination. I was surprised to find all traces of murmur and hypertrophy had disappeared, and she was able to go through any amount of exertion without the slightest dyspnœa, and I satisfied myself of this by repeated examination. Since then I have met with similar cases amongst hospital patients, all occurring in young subjects.

In what manner can we explain the disappearance of such organic murmurs? Hayden, in his work on diseases of the heart, ascribes the murmurs of mitral regurgitation, besides those due to valvulitis with thickening and interstitial deposit. to the following causes:—"The mitral valve," he says, "may, however, be incompetent without having undergone any change of structure whatsoever:—(*a.*) Valvular inadequacy and regurgitation from displacement of one or both segments of the valve through the papillary muscles and tendinous chords by excentric yieldings of the walls of the left ventricle at the acme of systole. This result may be due to fatty degeneration of the left ventricle. It may be likewise attributable to debility without structural alteration of the valves, or of the ventricle from anæmia, malnutrition, or asthenic disease. (*b.*) Regurgitation from rupture of one or more of the primary tendinous chords. (*c.*) From dilatation of the left ventricle without proportionate elongation of the papillary muscle. (*d.*) Weakness and relaxation of the papillary muscle. (*e.*) Adhesion of the tendinous chords to the wall of the ventricle. (*f.*) Engagement in

the orifice of a pedunculated mass of fibrine depending from its attachment to one of the curtains of the valve or to the interior of the auricle. (*g.*) Fixation of the anterior segment of the mitral valve by a calcareous mass descending from the aortic orifice and attached to the valve."

Under which of these heads can I include the case just mentioned with others of a similar nature? It would seem to me to belong to that of thickening with interstitial deposit, which must have, in the course of time, when competency became fully established, got absorbed, as other deposits of a similar nature during the rapid metabolic changes that take place in a growing subject or one nearing maturity.

On this point Hayden again says—"In the opinion of some writers a process of tissue-change in the direction of cure may be set up; the hypertrophied connective tissue of the valves being reduced to its normal proportions by absorption, and the deposit, if any, disintegrated and detached by the blood-current, to be subsequently dissolved and excreted. I cannot," he says, "subscribe to this doctrine, inviting though it be. The valves of the heart are not so circumstanced as to admit of this favourable change. They are in the performance of their functions subject to the pernicious influence of three forces operating alternately, namely—motion, friction, and tension, which are eminently calculated to maintain in them a state of constant irritation or chronic endocarditis, necessarily resulting in progressive valvular disorganisation. This downward progress once set up may be restrained or retarded but not arrested or reversed." With the greatest respect for the opinions of such a high authority, I think this assertion is too dogmatic, and not borne out by the clinical experience of others.

We should be less prepared to find the murmur of aortic regurgitation to disappear once such a condition becomes apparently permanent; but I have met with two such cases—one in a gentleman aged 45, the other in a girl aged 20. In the gentleman's case I only discovered the presence of the murmur when giving him an opinion as to whether he would be taken as a good life for assurance. I found at my examination then that the left ventricle was dilated, but moderate hypertrophy was present also, and as the patient made very little complaint referable to his heart or to symptoms depending on regurgitation, I concluded the case was recent. I told him I did not think an insurance company would accept him owing to an affection of his heart which I found present.

As the patient was addicted to the free use of alcohol I cautioned him against it, as I could not find any other cause for his valvular affection, he being neither gouty, nor syphilitic, nor albuminuric. I saw him again a month later; the murmur was still present, but there was no further increase in either the hypertrophy or dilatation, and he complained only of occasional sudden perspirations troubling him at night. After a further month's treatment he returned with the regurgitation cured, as the murmur had entirely disappeared.

In the other case, that of the young girl, the aortic regurgitative murmur arose out of an attack of acute rheumatism, and continued with symptoms of dilatation and hypertrophy of the ventricle for over two years. A recurrent attack of rheumatism then came on with pericarditis, and after it had passed away, instead of the heart being worse and the aortic regurgitation increased, the murmur had disappeared, and she has had no return of rheumatism or cardiac troubles since, though several years have elapsed.[a]

I cannot offer an explanation of how these murmurs have disappeared, unless by the absorption of plastic material deposited on the edges, or in the substance of a valve, and preventing adaptation; no symptoms of constriction existed in either case.

There is one practical lesson, at all events, I have learned from observing murmurs arising in the course of rheumatic endocarditis, and that is, never to pronounce a patient to be the subject of incurable cardiac disease for at least a month or two after convalescence, and I am more disposed to lengthen the time before delivering this opinion than to curtail it.

ART. XVI.—*Inflammation of the Breast and its Treatment by Elastic Pressure.*[b] By ANDREW J. HORNE, F.K.Q.C.P.; ex-Assistant-Physician to the Rotunda Lying-in Hospital, Dublin.

THERE are few practitioners of medicine who, from time to time, are not consulted occasionally with respect to conditions of the breast, yet the simpler though not less important affections more

[a] Since writing the above, Dr. D. Campell Black, of the Royal Infirmary, Glasgow, has kindly called my attention to a case of double aortic murmur reported by him in the *British Medical Journal* of February 16th, 1884, which entirely disappeared, the patient, he adds, being perfectly free from all trace of disease at the present time.

[b] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland.

frequently come under the notice of the obstetrician, being often connected with some disturbance of lactation. I need not, therefore, make any apology for having selected mammary inflammation as a subject worthy of discussion by the Obstetrical Section of the Royal Academy of Medicine in Ireland. I have been actuated by considerations which, to my mind at least, seemed satisfactory. These considerations are the practical importance of the subject, the length of time since it has been discussed amongst us, as it is now nigh thirty years since that erudite observer, the late Dr. M'Clintock, read his classical paper on Mammary Inflammation and Abscess before the Surgical Society of Ireland, and finally to elicit from the members present their opinions on the method of treatment to be pursued, as I have been led both by experience and reflection to consider that the methods usually taught and practised are gravely defective.

At the outset I wish to state that I do not claim any originality for the method of treatment I now advocate, as treatment by compression has long been recognised as recommended by Baron Scutin, O'Farrell, Scanzoni, and others too numerous to mention; but to Dr. Kelly, now of New York city, am I indebted for first bringing under my notice the treatment of mammary inflammation by elastic pressure, and more recently to a paper of Dr. Harris, of Patterson, New Jersey, entitled "The Treatment of Mastitis by Bandaging and Rest." During my time as Assistant-Master at the Rotunda Hospital, ample opportunity was afforded me of testing the value of this treatment, and so convinced was I of its utility that ever since have I adopted it in my private practice, with the most gratifying results, as a suppurating breast I consider ought to be a very rare occurrence, and will seldom occur in the experience of anyone who will apply continual and equable pressure, and will refrain from rubbing or using other artificial means, such as the breast-pump. How much at variance this statement is when compared with M'Clintock, when he says:—"The resolvent treatment of mammary inflammation is admitted to be very unsatisfactory, rarely effecting the desired end, even though undertaken at the very onset of the disease, and carried out with vigour. In our most recent surgical text-books the treatment recommended is: In the first place, repressive measures should be employed, cold lotions, or the extract of belladonna, occasionally leeches and derivative aperients. Suckling may be continued, but it will be often necessary to use the breast-pump. Established inflammation,

with redness of the skin, and almost inevitable abscess, must be met with warmth and moisture, poultices, supporting breast in a sling, &c."

Mastitis is ordinarily observed only at the epoch of the functional activity of the mammary gland. When it is met with out of the puerperal period, it then coincides with certain periods of development of this organ—as, for example, in the newly-born, at the epoch of puberty, of menstruation, &c. When it occurs during the puerperal period, it generally makes its appearance about the second or third week, and, *en passant*, I may here remark, that except in the nursing mother, or those that have had the infant to the breast, I have never known inflammation of the breast to follow. In women who have borne dead children, or whose infants perished during delivery, one would naturally expect inflammation more likely to follow; but experience teaches us otherwise. The explanation will easily be recognised when we consider for a few moments the ætiology of the affection.

Ætiology.—On the second or third day after labour, with the turgescence and increased size of the breast, the full functional activity of lactation is entered upon. This normal physiological incident was formerly regarded as most potent in the production of the various local and general disturbances so frequent at this time, and as the first symptom of a developing mastitis. As mastitis occurs almost exclusively only during lactation, it was quite natural to suppose that some irregularity in the secretion of the milk was the cause of the inflammation. Retention or impaired flow of milk played, therefore, an important part in the ætiology of the affection. Retention of milk may, in the same way as the retention of other secretory fluids from accumulation of contents, cause, eventually, a slight circumscribed inflammation; but this is rare and totally different from the phlegmonous inflammation found in mastitis. Cold, mental disturbances, general debility, and even epidemic influences have been accused of causing mastitis, but I think it is now generally conceded that in all cases of mammary inflammation we find sore nipples have either preceded or are associated with the inflammation. The fissures and abrasions are the channels by which the infecting matter gains entrance and causes inflammation. The fact that sore nipple was a forerunner of mastitis did not escape the notice of M'Clintock, as he says—"A very large proportion of his patients had some form of sore nipple previously to the occurrence of inflammation of the gland; on a

few occasions I have had an opportunity of observing the inflam mation of the breast to supervene immediately and directly upon the ulceration or fissure of the nipple, as though it were an extension from it. The great danger to be apprehended from sore nipples is mammary inflammation." Later on he says—"Let it not be supposed that I regard abrasion or fissure of the nipple as the only cause of mastitis. Far from it, but I believe it to be a very frequent and influential one."

When inflammation has attacked the breast, it is generally indicated by pain, tenderness over a limited area, together with more or less febrile disturbances, rise of pulse and temperature, very often preceded by a rigor. Movement of the breast is productive of pain, and a hardness is perceptible in some part of it, and over this a flush often exists on the surface. The indications for treatment, to my mind, are at once self-evident; secure the most perfect rest for the inflamed organ, let nursing from the affected side be discontinued, and, finally, let me sum up, in Dr. Harris's words (*loc. cit.*), rest from passive motion, rest from secretion, and rest from pain. All these conditions can in a great degree be immediately secured for the patient.

For the relief of pain, as also for its absorbent proportions, I paint the affected breast with a five per cent. solution of oleate of mercury and morphin. I say five per cent., as the stronger solution may cause vesication. Place your patient in the sitting posture, and remove all clothes from the arm and chest, so as to allow the night-dress to fall about the waist. Envelop the affected breast in a layer of cotton wool, and begin by applying it around the waist and securing it with a safety pin to the side of the dorsal vertebræ, then gradually encircling the breast, using as much pressure as the patient can conveniently bear, until the whole of the affected gland is covered. When thus applied, the patient at once experiences relief from pain, as the engorgement produced by the weight and hanging breast is at once overcome. Should the bandage exert undue pressure in any particular spot, the patient, by turning up a fold, can at once give herself relief without undoing the pins.

The infant can suckle the unaffected breast as usual. Should pain continue, I leave a prescription for an anodyne draught, but seldom is it necessary. I restrict the quantity of drink and fluid nourishment. In case the bowels are confined, I administer a saline aperient.

I will not weary the Section with a recital of a number of clinical histories, but will select two of my more recent cases in which I adopted this treatment.

Case I.—Mrs. C., aged thirty, confined of her fourth child, May 27, 1888. Her labour was natural. On the day following delivery her breast filled rapidly. The child, a strong male infant, was applied regularly. On the third day there was marked tenderness of left nipple, for which boracic lotion was ordered. The patient sat up on the tenth day, when my attendance ceased. On the seventeenth day this lady took a drive. At 11 p.m. on that night she felt cold and complained of great pain in the left breast, which was very much distended, red, and tender. The thermometer registered 103·5°; pulse, 120. I at once applied the bandage, and ordered an anodyne, in case the pain continued.

June 15th.—Temperature, 99·4°; pulse, 88. Patient had a fair night, but was troubled much with perspiration about the head and neck, but had very little pain in breast. Slept after draught. The bandage was removed; patient immediately experienced pain, as the breasts were still very much enlarged, and asked to have it re-applied, as it gave such support. She did not wish to continue nursing any longer, so the infant was placed on a bottle. The bandage was re-applied daily for a week, as the milk flowed freely from the nipple, saturating the cotton wadding, at the end of which time the patient was allowed up; the bandage was then removed, but for some time subsequently the left breast remained much larger than the right.

Case II.—Mrs. X., aged twenty, primipara, anæmic. On the eleventh day subsequent to delivery I was hurriedly sent for to see her. She was suffering much pain in the left breast. On my arrival I found the nurse had applied a large linseed poultice. The breast was consequently very red, and very tender to pressure. I at once removed the poultice and applied the bandage, but passed it over the right shoulder so as to leave the right breast free, as she continued to nurse. Two days subsequently the right breast showed symptoms of inflammation, so I included it in the bandage, and allowed the infant no longer to derive nourishment from the mother. It was re-applied daily until the fourth day, when the inflammatory symptoms had entirely subsided.

I regret very much I have not kept a complete record of all the cases in which I have employed this method of treatment during the past eight years; but only on two occasions have I had a breast go on to suppuration, and when this accident happened it was to a very limited extent, and the appearance of the patient was totally different from what I was wont to witness during my earlier experience with poultices, &c., and which every obstetrician

has, no doubt, seen. It occasionally happens that a patient does not present herself for treatment until deep fluctuation is already perceptible. Under such circumstances we may afford the patient considerable relief by applying the bandage, but taking care not to use much compression, as otherwise we should only entail more suffering. In this way we shall naturally lessen the congestion in the breast, and limit the extent of the abscess. When it becomes necessary to open an abscess, I would do so by Lyster's method, and still use the elastic pressure over the dressing, as being much more easily applied than the ordinary strapping.

I have arrived at the following conclusions from my experience in the management of the puerperal breast:—

I. Mastitis is rarely seen, except in patients who have suffered from fissured or crushed nipples, and is the result of infectious matter gaining entrance.

II. That, as a rule, the secretion of milk continues only while the natural stimulus, as nursing or other means, continues to be employed.

III. That the secretion of milk, either in the normal or inflammatory state, begins to abate when such stimulus is withdrawn, and will entirely cease after a week or two.

That in all cases of threatened or inflamed breast, well regulated pressure by means of an elastic bandage should be applied, and no attempt should be made to nurse or withdraw the secretion until the entire subsidence of the inflammatory movement.

The advantages of the elastic bandage over an ordinary roller are:—1. It is easier of application. 2. The pressure is more uniform. 3. It is not so likely to slip. 4. It is more comfortable to the patient, as requiring much less material. 5. It is not necessary to apply it over the shoulders.

ART. XVII.—*Fractured Patella, Treatment by Extra-Articular Suture.*[a] By T. MYLES, F.R.C.S.; Demonstrator of Anatomy, Trinity College, Dublin; Surgeon, Jervis-street Hospital.

I FEEL tempted to apologise to the Royal Academy of Medicine for bringing forward such a threadbare subject as Fractured Patella. So much has been already written about it by better men than I am that I fear I must trespass upon the kindness

[a] Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, Feb. 22, 1889.

and good nature of the members of the Academy if I ask them to listen to the few observations I mean to make upon the subject.

I propose to discuss only four points in connection with this injury, but I think you will agree with me in considering them of primary importance.

1. What is the prospect to the average day-labourer when he fractures his patella, and the so-called ligamentous union results?

2. Why is bony union so rare in this accident?

3. How can bony union be obtained?

4. Under what circumstances is the surgeon justified in adopting severe measures to obtain this result?

In spite of all that has been said to the contrary, I venture to assert, as the result of my observations of cases long after they have left the hospital, that to the man who has to earn his bread by laborious toil a fractured patella means permanent disablement. In almost every case that I have seen such has been the result.

I do not mean to assert that there are not cases in which men have been able to follow laborious occupations after the injury, but I do state that such cases constitute but a small minority, and cannot justifiably be made the basis of a prognosis in any given case.

As there is a possibility of this statement being misunderstood, I will define the position I take up a little more clearly.

When one is shown a case in hospital of a so-called successfully treated fractured patella, the patient is told, by way of illustration, to walk up and down the room, to swing his leg about, to stamp upon the ground, to flex his leg upon the thigh, and to perform other evolutions of an equally innocent and harmless character, but almost absolutely valueless as a test of successful treatment.

There are three tests which ought to be applied to such a patient before a success in treatment can be claimed by the surgeon:—

1. He should be asked to spring off the floor by an effort of the injured limb alone.

2. He should be asked when lying on his back or sitting on the bed to raise the heel from the ground, when the leg has been previously fully extended upon the thigh.

3. The band between the fragments should be felt to become tense and hard when the patient, in walking, bears upon the injured limb.

I have gone to the trouble of testing these three points in a number of cases, and the results of my observations are as follows :—

I only once met a patient who could spring a foot off the ground, and he had met with the accident in early life—in fact, at eleven years of age—and, although considerable separation between the fragments existed, he could do nearly as much with the injured as with the healthy limb.

In his case, probably, the reparative power of early youth was responsible for the successful issue.

In every other case I have examined the patient was unable to make any attempt at jumping from the ground, and in most cases, with what I think commendable prudence, refused even to make a vigorous or determined effort to do so.

The second test, raising the heel from the ground when the leg is fully extended, is very rarely accomplished. I confess I was very much astonished to find how few patients could do it.

They will raise the heel readily enough when the foot is flexed, but not at all when fully extended; in other words, the value of the quadriceps as an extending force is practically *nil* when the patella is broken and the fragments are appreciably separated.

The third test is only an amplification of the second. The patient may be able to walk fairly well, but if you put your hand upon the uniting bond between the fragments you will notice that it is in many cases quite lax when it ought to be tense in extension of the leg. In fact, the power of the quadriceps is transmitted, not through the bond of union, but through the lateral expansions which pass down from the sides of the patella to the top and sides of the tibia, and the advancement of the injured limb in front of its fellow is accomplished, probably by the psoas and adductor muscles.

A patient may be able to walk fairly well—in fact, deceptively well—but if he fails in the three tests I have given it is obvious that he will be unable to earn his bread by laborious toil, and my assertion that he is permanently disabled will be fully justified.

I have gone to considerable length to attack the so-called ligamentous union, and my reason for doing so is simply this :—

One of the commonest statements in the text-books of surgery, and one of the most frequently reiterated assertions at clinics, is that ligamentous union is all that can be hoped for in fractured patella, and that such a result is to be considered satisfactory. I

have read and heard this statement again and again, and, with the simple credulity of youth, believed it implicitly.

From this state of assured bliss I was once rudely awakened by a poor woman coming to me for a note for the Union. Her husband had broken his patella some time previously, and was now unable to earn his bread. He had been treated in the orthodox manner, with a back-splint, pads, and bandages, and had left the hospital apparently well, with the fragments closely approximated, but six months afterwards a hideous gap had developed between the pieces of bone, his leg was wasted, and he was barely able to walk with the aid of sticks.

This may have been an exceptionally bad case, perhaps, but it at any rate had the effect of focussing my attention upon such cases, and as the result of my subsequent experience I do not hesitate to say that the so-called ligamentous union is only too frequently, so far as the dynamics of the leg are concerned, a mockery, a delusion, and a snare.

I now come to the most interesting of the four questions I have set down for discussion—namely, Why is bony union so rare?

From amongst a host of explanations I select four as worthy of consideration :—

1. Non-apposition of the fragments from inability to overcome the contraction of the quadriceps muscle.

2. Non-apposition of the fragments, due to prolapse between them, under the influence of atmospheric pressure of the tissues in front of the patella, as described by Macewen.

3. Separation of the fragments by the synovial or bloody effusion and defective formation of new bone, due to the fact that the fragments are constantly bathed in the synovial fluid of the joint.

4. Defective productive power in the bone itself, due either to the defective supply of blood or the absence of periosteum on the post surface of the patella.

These four will, I think, include the more important theories usually advanced to explain the non-union.

The two last are knocked out of court at once by one fact—namely, that in comminuted fractures, where, of course, these conditions as regards blood-supply, periosteum, and synovia are found, bony union occurs fairly frequently.

The first—that muscular spasm is responsible for the non-union—will hardly hold water.

Every practical surgeon knows well that but a very slight effort

is necessary in an ordinary case to approximate the fragments when the muscle is relaxed.

Any one of the many ingenious devices used in practice will overcome the contraction of the muscle and keep the fragments apparently together. I am sure that many hospital surgeons will support me in this statement.

Macewen's theory, that the torn structures in front of the bone will, under the influence of atmospheric pressure, be forced into the cleft between the fragments, is no doubt a very plausible one; I should be inclined to say more plausible than probable. Of course nothing but actual dissection of recent cases can determine the question, but from *à priori* reasoning the theory seems to me to be untenable.

A glance at a frozen section through the knee-joint will show that the tissue in front of the bone is very thin, and it is almost impossible to conceive that the torn fibres of such tissues could exert the extraordinary influence he attributes to them.

I have endeavoured to test this point by experiments upon the cadaver, but in vain; in every case I find that the muscles of the thigh will tear before the patella will break. We can only therefore, in the absence of actual dissections of recent cases, accept Mr. Macewen's theory as a hypothesis.

I think I have now fairly shown that none of these theories, with the exception of the last, perhaps, can be considered a sufficient explanation of the absence of bony union.

To what, then, is it due?

I would suggest, subject, of course, to correction, that in many cases the treatment is largely responsible for the bad result.

When discussing the question of muscular spasm, I stated that any one almost of the ingenious mechanical appliances devised for the treatment of the injury will overcome the contraction of the muscles and approximate the fragments, and so they will; but they will also do something more, as I will now make clear. If pressure be made upon the upper end of the patella, so as to force it downwards, it will be noticed not only that it travels downwards, but also that the lower end tilts forward. Anyone can demonstrate this in his own leg if he takes care to relax the quadriceps.

Further, the lower fragment sinks towards the tibia by its own weight, and pressure of any apparatus now forces it towards the cavity of the joint. The result, therefore, is that the fragments are now lying in totally different planes. Is it any wonder, there-

fore, that bony union does not result? The real matter of astonishment, I think, is that any kind of union at all results.

Now, as far as I can see, no splint or external mechanical appliance can be devised that will remedy this, because it depends upon constant anatomical conditions. The useful frozen section shows us that the posterior border of the patella is convex from above downwards, and the patellar surface of the condyles is also convex from above downwards. That being so, any attempt to shove down the upper fragment by pressure from above and in front will cause the rotatory movement I have endeavoured to describe.

How then can we get the broken surfaces together? The ready answer is, by opening the joint, drilling the bones, and wiring the fragments together after the manner practised by Sir J. Lister.

To this there are, however, very decided objections. At present there appears to be a superstition current that provided you have a spray going, gauze dressings, drainage-tubes, perchloride solutions, and other necessary paraphernalia, you can cut into a knee-joint and do pretty much what you like with it.

Professor Dennis, of New York, has collected the records of 186 cases in which the joint has been opened and the fragments wired, and the results are interesting indeed. Of these 186, 11 died, 4 resulted in amputation, 34 suppurated, 31 had either partial or complete ankylosis; in 24 the result is described as poor, in 35 as fair, and in 75, or less than half, as good.

Now these results are not encouraging, and I think most of us as yet would hesitate to recommend Sir Joseph Lister's method as a primary treatment.

In a discussion some years ago on the same subject, Dr. Robert M'Donnell put the question in a nutshell when he asked which of us, if his patella were fractured, would permit the joint to be opened and the fragments to be wired together? In a crowded meeting there was only one answer in the affirmative, and that was from my friend Mr. J. Lentaigne, who, with a martyr-like enthusiasm, declared his willingness to submit to the sacrifice provided always Sir Joseph Lister was the officiating high priest.

When cogitating over these things it occurred to me that it was possible to bring the fragments together and keep them there without opening the joint; that it would be possible to obtain the advantages of Sir J. Lister's method without the dangers.

Through the kindness of Professor Cunningham I was given

ample opportunity for testing the feasibility of my plan on the cadaver before trying it on the living.

My method, which I have ventured to designate "Extra-Articular Suture," is simply this:—

The limb being cleaned, the skin is drawn well up; a small puncture is then made through the skin on either side with a common bradawl; the upper fragment is cautiously drilled from side to side, the drill being constantly kept accurately parallel to the anterior surface of the fragment; through the drill hole a stout nickel-silver pin is passed, its two ends project on either side of the fragment, its centre is buried in the substance of the fragment. The lower fragment is then similarly drilled and transfixed, the skin having been previously drawn well down.

With the pins now in position you have a powerful grip on the fragments, and it is astonishing how little force is necessary to overcome the muscular contraction. When the fragments are drawn together and fixed in proper apposition, a gauze tape can be passed under and around them in a figure of 8, as in a hare-lip operation, or the free ends can be securely wired together.

A thick pad of lint, dipped in perchloride solution, 1 in 500, is wrapped around the joint, and outside that a layer of gutta percha tissue, to delay evaporation.

A posterior splint and flannel roller completes the dressing, which is not stirred for five or six weeks.

After the preliminary puncture and drilling the treatment is absolutely painless, as my patients have again and again asserted.

Such is briefly the method I employed in the first of my series of cases, and it is the method I hope to follow in subsequent ones.

In two other cases I modified the method slightly. Instead of drilling the bones I passed the pins between the bone behind and the expansion of the vasti muscles in front, hoping that by doing so I would obtain as good a grip on the fragments as in the first method.

The result, however, was disappointing in these cases, the tissue in front of the patella evidently not giving a sufficiently good and enduring grip to the pins.

I have abandoned that method now, and will adhere to my original idea in future cases.

The advantages I claim for the method are:—

1. That it is effective—that is to say, it will keep the fragments in perfect apposition without the tilting incidental to mechanical appliances.

2. It is free from the danger of septic infection, as the joint is not opened.

3. It is easy and simple, and within the reach of everyone, requiring no costly appliances.

The only methods that I know of that it can fairly be compared with are Professor Volkmann's method and Mr. Treves' modification of Malgaigne's hooks.

Professor Volkmann's method consists in passing a wire ligature through the border of the quadriceps above and the ligamentum patellæ below.

The objections to this method are so obvious that I will not waste time by detailing them.

Mr. Treves' method of using Malgaigne's hooks is open to several objections:—

1. Everybody has not, and may not be able to procure, the hooks.

2. The joint is often perforated above or below.

3. The hooks also tend to tilt forwards the lower end of the upper fragments as they press the patella from the front and above.

4. They are painful and cumbersome.

I think I may, without either arrogance or conceit, assert that with either of these methods the plan I suggest will bear comparison of safety, efficiency, and simplicity, and these should be regarded as the basis upon which a decision is to be given.

I will now conclude by stating that I honestly believe if bony union can be obtained by any means short of opening into the joint it will be obtained by the Extra-Articular Suture.

DR. CORLEY'S UNUSUAL CASE OF THYROID TUMOUR.

Our readers will remember this remarkable case, which Dr. Corley presented to the Section of Surgery, in the Royal Academy of Medicine in Ireland, on March 29th, 1889, and which appeared as an "Original Communication" in the last number of the Journal (see page 294). We have much pleasure in presenting the illustration of Dr. Corley's case—which, unfortunately, did not reach us in time for insertion with his paper. It will add to the value of this unique clinical report of an operation, which Mr. Edward Hamilton, when speaking upon it, well described as "a triumph of surgery." We are gratified to learn that the patient continues up to the present date in excellent health.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Handbook of Hospital Practice and Physical Diagnosis. By Christopher J. Nixon, M.B., LL.D., Univ. Dubl.; M.D. (*Hon. Causâ*), R.U.I.; Senior Physician, Mater Misericordiæ Hospital; Examiner in Medicine, Conjoint Examination of the Colleges of Physicians and Surgeons in Ireland, &c. London: J. & A. Churchill; Dublin: Fannin & Co. 1889. 8vo. Pp. 364.

Few will be found to deny that Hospital Practice is in importance second to none of the many scientific and practical subjects which have to be studied by the aspirant for medical and surgical qualifications.

In recent years a great change has come over medical opinion as to the relative usefulness of the various parts of the student's curriculum during the four pregnant and eventful years which precede his final examination and admission to practice. Mere attendance upon lectures, or rather at roll-call in the lecture theatre, is gradually falling into disrepute as a means of medical education, and the tendency has been of late to make the curriculum more and more practical. The authorities of the King and Queen's College of Physicians and of the Royal College of Surgeons in Ireland have moved with the times, and, in arranging the course of study and the sessional examinations under their Conjoint Scheme, have wisely endeavoured to secure that the candidates shall not only produce evidence of practical study before admission to examination, but at their examinations shall submit that evidence to a crucial test.

Accordingly, before admission to the second professional examination every candidate is required to produce certificates of having attended, not only several courses of lectures, but a medico-chirurgical hospital for nine months, together with evidence of having taken notes to the satisfaction of the physicians or surgeons in charge of the cases, and certified under their hands, of at least three medical and three surgical cases in the wards of a recognised medico-chirurgical hospital. Nor is this all, for "Hospital Prac-

tice" finds a place among the subjects of that second examination, and the candidate will be tested as to his knowledge of the different methods of physical diagnosis, the application of urinary tests, the general principles of case-taking, the practical treatment of fractures, dislocations, wounds, and hæmorrhages, and bandaging. A similar hospital certificate and a more extended syllabus of practical medicine and surgery are required for the third professional examination.

This highly desirable change in the Regulations of the two Royal Colleges has at once created a demand for a standard text-book on Hospital Practice. Such a text-book now lies before us.

Dr. Christopher J. Nixon has long since won his spurs as a skilful physician, a deep and original thinker, and a successful clinical teacher. His name on the title-page of a book would alone claim an attentive study of its pages. It was, therefore, with confidence that we took up his new work, and a closer acquaintance with its contents has only tended to confirm our first favourable impressions.

The book consists of an Introduction, a series of twelve chapters, an Appendix giving a method of case-taking, a Glossary of technical terms, and a remarkably full Index.

The Introduction opens with definitions of nosology, semeiology, diagnosis, signs and symptoms. Attention is then drawn at length to the *facies* of disease, constitutional types, the state of general nutrition of patients, their *decubitus*, temperature, pulse-rate, appetite, the state of the tongue, skin, and subcutaneous tissue. All this is well done; but we would specially note with approval the reproductions of sphygmographic tracings which illustrate the section on the Pulse.

The body of the work treats of five subjects. These are—(1.) the physical examination of the organs of respiration by the methods of inspection, palpation, percussion, and auscultation; (2.) an examination of the sputum, to which Chapter V. is devoted; (3.) the physical examination of the organs of circulation—the heart and great vessels—by the usual methods; (4.) the physical examination of the abdomen; and (5.) the examination of the excreta. As the author remarks in the Preface, it will be observed that there are in his book no chapters dealing with the physical signs of diseases affecting the nervous system, the larynx, or the blood. He promises, however, that these will be dealt with, for the use of advanced students, at a future period.

Although much original matter is to be found in the pages of his book, Dr. Nixon has not hesitated to draw from standard sources the most recent views as to the explanation of certain acoustic phenomena. By so doing we think he has enhanced the value and importance of the work; and the same remark applies to its illustration with drawings culled from the writings of Byrom Bramwell, Gee, von Ziemssen, Graham Brown, Walsh, Roberts, and James Tyson.

As an example of the general accuracy of statement which characterises the book, we may quote from the paragraph on "Pectoriloquy" in the chapter (IV.) on Auscultation of the Lungs. Dr. Nixon correctly says that this physical sign may be regarded as a greatly increased form of bronchophony, in which not only the *noise* of the voice is heard, but the sounds are most distinctly *articulated*. He adds :—

"A sharp distinction is drawn by some authorities between pectoriloquy and bronchophony. Bronchophony is held to represent the conduction downwards of the vibrations of sound produced in the larynx, whilst pectoriloquy represents those vibrations which are developed in the mouth, and which form articulate speech. Hence, pectoriloquy will be best heard during a whisper, when the aperture between the cords is widened out, and so the transmission of articulate sounds is facilitated; whilst in loud speaking the portal of the larynx being almost closed, their transmission is obstructed, and they are rendered almost inaudible (Bristowe)."—Page 95.

All who are familiar with Dr. Nixon's special fields of investigation will turn with interest to the chapters on Physical Examination of the Heart and Great Vessels. Nor will they be disappointed, for there stated and explained they will find all the mysteries of fluid veins, post-diastolic murmurs, functional pulmonary murmurs, Naunyn's murmur, and many other phenomena connected with the circulation in both health and disease. The points noted in reference to functional pulmonary murmurs are taken chiefly from a paper on the subject by Dr. Nixon himself, which appeared in the number of this Journal for September, 1881 (Vol. LXXII., page 193).

But it must not be supposed that the section on the Circulation has been made as complete as it is at the expense of that on the Examination of the Abdomen. Quite the contrary. In Chapter X. an excellent description of the abdominal regions will be found, and this is succeeded by a detailed account of the methods

employed in the investigation of disease within the abdomen—namely, inspection, palpation, percussion, auscultation and mensuration. The remainder of this chapter—one of the best in the book—deals with the physical examination of the chief abdominal organs, such as the liver, stomach, spleen, pancreas, kidneys, and intestines.

The last two chapters are on the Examination of the Excreta. Chapter XI. contains a very fair account of the general physical and chemical characters of the urine, which is illustrated by a number of woodcuts after Harley, Tyson, and Roberts. Chapter XII. treats of vomiting, the examination of vomited matters, defæcation, and the examination of the fæces.

The style in which the work has been brought out reflects the greatest credit upon the well-known firm to whom Dr. Nixon entrusted the publication of his book, and of whom Dublin may well be proud. The paper, printing, illustrations, and binding, are everything that could be desired.

In concluding this notice, we have to congratulate Dr. Nixon on the success which has crowned his efforts to produce a text-book of Hospital Practice and Physical Diagnosis, which will redound to the credit of the Dublin School of Medicine, of which he is so distinguished an alumnus, and so successful a teacher.

A Manual of Pathology. By JOSEPH COATS, M.D.; Author of "Lectures to Practitioners on the Pathology of Phthisis Pulmonalis;" Pathologist to the Western Infirmary and the Sick Children's Hospital, Glasgow, &c. Second Edition, revised and mostly re-written, with 364 illustrations. London: Longmans, Green, & Co. 1889. Pp. 977.

AMONG the many English works on Pathology which have appeared during the last few years the first edition of Dr. Coats's Manual has deservedly held a very high place. It is, therefore, with much pleasure that we welcome this second edition, especially as it is by no means a mere reprint, but, on the contrary, as the author states in the preface, has been almost entirely re-written. As a proof of the admirable manner in which the book has been brought up to date, we may mention that there are many references to articles which have only been published during the summer of the present year.

The first chapter treats of the Nature and Causation of Disease in General, of the Influence of External Forces, of Inheritance of Individual Predisposition of Age and Sex, and of the Termina-

tions of Disease. Dr. Coats's remarks on these subjects are very well worth reading. We next have chapters on Malformations, on Affections of the Circulation, and on Alterations in the Blood. In the description of the coagulation of the blood we are surprised to find Schmidt's views only are mentioned; clotting is ascribed to the union of fibrinogen and fibrino-plastin in the presence of fibrin ferment, and no reference is made to Hammarsten's investigations. This physiologist has proved that pure fibrinogen, when acted upon by fibrin ferment, yields fibrin, and that the presence of fibrino-plastin is not necessary for coagulation.

There is a good article on the Pathology of Diabetes Mellitus, which Dr. Coats sums up by stating that—"Most of the known facts may be held as indicating that diabetes depends on the liver being supplied with blood of an abnormal character, and at an accelerated rate of speed;" "the nature of the alteration may be summed up in the statement that the blood reaches the hepatic capillaries in a condition approaching that of arterial blood, instead of venous blood, as under normal conditions;" "the congestion of the liver depends on abnormal nervous arrangements, and these may be local, affecting the cœliac plexus, or possibly situated in the central nervous system." We do not think that this view has as yet been proved with any degree of certainty; many of the phenomena connected with diabetes cannot be explained by it. That glycosuria is not always due to vaso-dilator results is shown, as Foster remarks (Text-book of Physiology, 5th edition, Pt. II., p. 732), "by the fact that strychnia poisoning produces diabetes in frogs, and produces it by rapidly hurrying into sugar the hepatic store of glycogen. Now, in strychnia poisoning the hepatic blood-vessels are constricted, not dilated, their muscular fibres, like the skeletal muscles, being thrown into contraction by the action of the poison." It has not been shown that the abnormal nervous influences in diabetes do not act directly on the liver-cells. In our present state of uncertainty, we think it would have been better to have formed less definite conclusions as to the causation of diabetes.

The next chapters treat of Inflammation, Retrograde Changes, and Regeneration, and give a very clear and intelligible account of these somewhat difficult subjects. Referring to the cause of the increased temperature of inflamed parts, Dr. Coats makes, we think, rather too absolute a statement. After showing from the experiments of Cohnheim and others that the rise of temperature is due mainly to the increased afflux of blood, he writes—"We

may safely infer, then, that in inflammation there is no local production of heat." Now, wherever metabolism of protoplasm is going on, heat is being set free; in an inflamed area we must believe that metabolism is going on rapidly. We, therefore, believe that a certain amount of heat is produced locally in an inflamed part, but that this amount is not sufficient to have much, if any, appreciable effect in raising the temperature of the part.

There are good chapters on Bacteria, Parasitic Fungi, and on many of the Parasitic Worms; the common varieties, however, of Round Worms are dismissed with rather short notice. Tumours and Pyrexia are also discussed.

The second part treats of Diseases of the Special Organs and Systems. Dr. Coats does not confine himself to purely medical diseases, but includes, in this Manual, Diseases of the Bones and Joints, of the Generative Organs, of the Skin, and of the Eye and Ear.

In the description of the internal capsule, in the section on the Nervous System, we notice the statement that—"The anterior parts of the internal capsule contain motor fibres, and the posterior sensory; it is generally said that the anterior two-thirds are motor, and the posterior third sensory." It should have been explained that this statement applies only to the *posterior* limb of the internal capsule. The anterior limb is not directly either motor or sensory, but consists of commissural fibres which pass between the præfrontal lobe and the cerebellum.

Dr. Coats's remarks on the ætiology of pneumonia are worth quoting:—

"The causation of acute pneumonia has not been fully elucidated. The fact that a definite chemical irritant, such as carbolic acid, when administered in considerable quantity, has more than once produced a typical pneumonia, seems to indicate that a poison in the blood is the cause. Many facts indicate that in ordinary cases of pneumonia some form of morbid poison, probably a microbe, exists in the blood, and produces, on the one hand, the acute fever, and, on the other, the local inflammation. For example, the fever often precedes the local lesion, and hence can scarcely be regarded as a consequence of it. The fever has a definite course, and usually ceases abruptly, while there is no such sudden change in the local inflammation. Then, pneumonia is sometimes associated with other local inflammations, as with acute meningitis, and even with other forms of fever, such as typhoid, in which case it is to be presumed that the same irritant existing in the blood has produced

the several effects. There is also the fact that pneumonia sometimes occurs in an epidemic form. Looking to the various circumstances under which pneumonia is met with, and its occasional occurrence along with other forms of inflammations and fevers, it seems probable that no single microbe is always the morbific agent."

The article on Bright's Disease is particularly good. We do not remember ever to have read a clearer or more intelligible description of the very complicated series of changes which occur in the kidney in this disease. With regard to the causation of cardiac hypertrophy in this disease, Dr. Coats, in this edition, has adopted Cohnheim's theory, as amplified by Fagge, and believes that the hypertrophy is compensatory, and is brought about to prevent the undue accumulation of urea in the system.

The sections on the Skin and on the Eye and Ear are short, and do not contain anything that calls for reference.

Dr. Coats's style of writing is very clear, and pleasant to read. His descriptions of microscopic morbid anatomy give the reader a more vivid idea of the condition of diseased tissues and organs than do the writings of almost any other author we are acquainted with. Many of the figures with which the work is illustrated are very instructive; most are original; some, however, are so rough as to be almost useless. The index is remarkably good.

The Republic of Uruguay; the Country in the Paris Exhibition. General Description and Statistical Data. 1888–89. Issued by Authority of the Consulate-General, London, 1889. Liverpool: Rockliff Brothers, Limited, Printers, 44 Castle-street. 1889.

The name of the Republic of Uruguay recalls one of the greatest victories of peace that Great Britain ever effected—the creation of the Republic of Uruguay and the termination of the war between the Empire of Brazil and the Argentine Republic for this fertile country, which in size almost equals that of England and Scotland. The pamphlet before us sets forth the material prosperity of this Republic since it attained the rank of an independent State, and, as might be supposed, it is largely occupied with commercial statistics, and information on constitution and politics of the country.

Although the official language is Spanish, and the largest owners of land are Italian, it is gratifying to find that the commerce of

the country is in British hands. In 1887, "of a yearly traffic of two and a half million tons, considerably more than one million tons are carried by the British flag."

The progress of the country may be fairly estimated by the increase in its correspondence, which in 1888 was 40 per cent. greater than in 1887, the figures given for letters and printed matter passing through the Post Office being—1888, 7,603,821; for 1887 they were 5,650,945.

Hygiene is not ignored. Monte Video, the capital, enjoys an abundant supply of good water, and this year further improvements are being made in the arrangements for its supply. The city is lighted both with gas and electricity, and possesses in its suburbs large public bathing establishments.

It was in Monte Video that Baron Liebig first established his meat extract manufactory, in which, since the works were started, 3,000,000 of cattle have been killed. The amount of beef necessary to produce one pound of extract is forty-five pounds. At Salto and at Trinidad large meat extract factories also exist; and the well-known delicacy, "Paysandu" ox-tongues, are products of Uruguay.

The educational statistics are very scanty, the account of the Medical Faculty of the University of Monte Video being disposed of in two lines; but even in the scanty notice we find evidence of progress: eight foreign professors have been brought over to assist the eleven Uruguayan professors of the School of Medicine.

The religion of the State is Roman Catholic, but quite recently permission has been given to hold the Protestant service in seaport towns.

The Diseases of the Madras Famine of 1877–78. By ALEXANDER PORTER, M.D., F.R.C.S.I., M.R.I.A.; Brigade-Surgeon, Her Majesty's Indian Army; Fellow of the University of Madras; Principal and Professor of Medicine, Medical College; and Senior Physician, General Hospital, Madras. Madras: 1889. London: H. K. Lewis. 8vo. Pp. 253.

THE experience recorded in this volume is absolutely unique. Famines, unhappily, are not uncommon in Eastern lands, or nearer home, but the medical history of 3,250 famine patients, with a mortality of 34·36 per cent., and "the pathological appearances

observed in 459 consecutive autopsies," will not be found elsewhere in professional literature.

On the 13th of December, 1876, sheds for famine-sick were opened, in connection with the Royapettah Hospital in Madras, and on that day three men, one woman, and a child were admitted. In July, 1877, the admissions were 391. From this date the numbers decreased to the 25th of May, 1878, when the sheds were closed. In 1877 the average daily sick were 74·83—30·93 men, 26·53 women, 17·27 children. In the seventeen months 1,117 victims to famine died in these sheds. We cannot speak too highly of the zeal and industry with which Dr. Porter, in addition to the ordinary onerous duties of his position as District-Surgeon, undertook 459 autopsies, in circumstances which are with difficulty realised in our temperate zone; and we congratulate ourselves on having been the first to present some of his results to the profession in our pages. We commend the book—well printed and well illustrated—to pathologists more especially, but not to them alone, extracting only the following summary of causes of mortality:—

Statement of Causes of Death in 459 *Autopsies.*

—	Men	Women	Children	Total
The Alvine Fluxes - -	166	119	62	347
Cholera - - - -	7	4	2	13
Dropsy - - - -	13	6	3	22
Fever - - - -	3	1	3	7
Acute Pneumonia - -	12	6	3	21
Phthisis Pulmonalis - -	12	7	—	19
Atrophy - - - -	4	4	4	12
Hepatic Abscess - - -	3	—	1	4
Pyæmia - - - -	1	2	—	3
Apoplexy - - - -	2	2	—	4
Cancer - - - -	1	1	—	2
Intestinal Ulceration - -	—	1	—	1
All other Causes - - -	2	2	—	4
Total -	226	155	78	459

A Surgical Handbook for the Use of Students, Practitioners, House Surgeons, and Dressers. By Francis M. Caird, M.B., F.R.C.S. (Ed.), and Charles W. Cathcart, M.B., F.R.C.S. (Eng. and Ed.), Assistant-Surgeons, Royal Infirmary, Edinburgh. With very numerous Illustrations. London: Charles Griffin & Company, Exeter-street, Strand. 1889.

We have seldom found such a mass of well-arranged, clearly-told information in the same space as we find in Messrs. Caird and Cathcart's excellent handbook of surgery.

Space does not allow of our doing more than mentioning the articles on "Casetaking," "Hæmorrhage," "Antiseptics," "Anæsthetics," "Massage," "Minor Operations," and "Urine."

The directions for giving anæsthetics are told plainly, clearly, and fully. No ordinary student can possibly mistake the authors' meaning.

In advocating chloroform, and insisting on the attention of the anæsthetist being particularly given to the respiration, the authors are in accord with the Hyderabad Chloroform Commission, although at variance with the London school-men. Happily, however, in medicine we acknowledge no claims to infallibility; and we cannot forget that a slavish following of authority, even though eminent as Galen, degraded medicine from the position of a science and art to the condition of a tolerated quackery.

All the many appliances generally used for arresting bleeding are pictured and explained; but the few lines that tell of the disuse of acupressure by the profession is a strange commentary on the adulations showered on Simpson by a group of sycophants who credited him with the discovery, whereas in 1763 Mr. Lambert brought forward the claims of acupressure before the Medical Society of London, in a paper which was read for the author by no less a personage than Dr. William Hunter.

Our surgical brethren, however, love new appliances, and, like children with toys, weary of them and throw them aside.

The article on "Massage" is timely, and in brief though clear language, aided by illustrations, the system is explained. We wonder will it, after a few succeeding editions, meet the fate of acupressure, and be dismissed in a few lines?

Every article is well worth study, and all are full of useful, practical hints, both to students and practitioners. We cannot but particularly commend the chapter on "Urine." Nothing

could be better than the clear, intelligible way in which a student is instructed to recognise and detect the deviations from the normal in the secretion. The rules for chemical testing are very good.

We congratulate the authors on their success in producing so useful, intelligible, and excellent a handbook on surgery, and we heartily commend it to our readers as one of the best surgical handbooks we know.

The typography and beautiful binding leave nothing to be desired.

Psycho-Therapeutics; or, Treatment by Sleep and Suggestion. By C. Lloyd Tuckey, M.D. London: Baillière, Tindall, and Cox, 20 & 21 King William-street, Strand. 1889.

Animal Magnetism, Mesmerism, Hypnotism, Braidism, Psycho-Therapeutics, are all synonyms for the same system of treatment, and we think nothing more pernicious to the physical and moral welfare of the public could be introduced than treatment by suggestion—psycho-therapeutics.

Dr. Tuckey's book, as an historical *resumé*, is most readable and interesting, but he comes forward, not as an entertainer, but as the advocate of a system of pseudo-therapeutics which, we are happy to know, has gained little favour in the United Kingdom.

Suggestion is one of the oldest of remedies, and one of the most fruitful for mischief in the past.

The whole tendency of modern thought and teaching is to keep subjective feelings well in control, and to correct them by objective sensations, but suggestion reverses all this—the objective is to count for nothing, and the evidences of the five senses are to be considered as non-existent.

Are we to once more see crowds waiting for the "Royal toutch," to have spells, charms, relics, incantations, and cramp rings impressed amongst the auxiliaries of medicine? Is science to be thrown overboard, and reason to be disregarded, all because some hystero-epileptics and hypochondriacs exhibited their want of brains by blindly doing the bidding of the hypnotist?

A stupid boy is made intelligent, and an incorrigible sinner is made an earthly saint by mesmerism or suggestion, the cases well authenticated (page 42), as are those in which (pages 2, 3, and 4) medicines had not their ordinary physiological action, but acted as it was suggested they would when speaking to the patient.

Nothing could be more satisfactory than these results, but why confine them to Continental patients? Why not get some well-known psycho-therapeutist to visit our dull boys, make a tour of our prisons, and walk our hospitals?

So far psycho-therapeutics has made no position such as would justify the medical profession adopting it as a curative agent, and we cannot forget that the domain of Preventive Medicine exists, and we think it our duty to disapprove of anything likely to reproduce the excesses that marked the progress of the great advocates of "suggestion," who taught by the tomb of Deacon Paris; in the observatory of Father Hehl; in the reception-room of Mesmer; in the study of Cagliostrio; and the Temple of Health of Graham and Emma Lyons.

To be bitten by the Tarantula would be less injurious than to be influenced by psycho-therapeutics.

The Medical Annual and Practitioner's Index; a Work of Reference for Medical Practitioners. 1889. Seventh Year. Bristol: John Wright & Co. 12mo. Pp. 587.

We are glad to see a seventh issue of this useful compilation. Those of us who, after the manner of the Athenians in the days of our patron saint, spend "their time in nothing else, but either to tell or to hear some new thing," will find ample gratification in these pages; and even the steady-going practitioner who is content to treat, and cure, his patients with a dozen, or perhaps a score, of drugs, may find something here to add to his scanty but efficient *répertoire*. In this volume more than ninety new drugs, or new applications of old ones, are noted; all of which, no doubt, have had the success which, somehow, new remedies always have at first.[a] Papers on massage and on electro-therapeutics follow the seventy pages devoted to drugs, and will be found most useful. "New Treatment" occupies 380 pages, and is followed by "New Inventions," "Progress of Pharmacy," "Dietetic Novelties"—including, apparently, a statuette of Harvey. Part III. contains lists of lunatic asylums, homes for inebriates, hydropathic establishments, a Life Assurance Directory, a Trade Directory, and a (very imperfect) list of medical and scientific periodicals. The arrangement

[a] It is told of a fashionable Parisian physician that, when a patient exclaimed, "Oh, you are ordering that new medicine," he replied, "Oh, yes, I am prescribing it *while it cures!*"

is alphabetical throughout, and supplemented by indexes. The work is well edited and well printed, and should be in the possession of every medical man who desires to have an annual record of medical progress.

Twenty-fifth Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, &c. 1888. Boston: 1889. Pp. 117.

Medical and Surgical Reports of the City Hospital of the City of Boston. Fourth Series. Edited by DAVID W. CHEEVER, M.D., OLIVER F. WADSWORTH, M.D., and GEORGE B. SHATTUCK, M.D. Boston: 1889. Pp. 227.

THE Boston City Hospital contains 480 beds, besides 70, available in summer, in tents. The actual accommodation, however, is practically 460—"because the summer tent-service is used as a relief in successively vacating the wards, and it is hardly possible that every ward should ever be full, especially those for contagious diseases." In 1888, 441 was the largest number of in-patients at one time, and 320 the least; the daily average, 378; the average duration of treatment, 22·21 days. The average net cost of each in-patient per week was 7·91 dols.—about 32 shillings. The total cost of maintenance of the hospital was 203,206 dols.—10·28 dols. per patient per week—borne by the city funds; to which, on the other hand, was credited 29,772 dols., including 27,946 dols. contributed by paying patients. This expression, however, includes persons who had no claims upon the charity of the city, and whose hospital expenses were paid by other cities and towns. "Considerable sums" were contributed by paying patients in the ordinary sense. The terms on which private patients are received are 15, 20, and 25 dollars a week for separate rooms. 13,383 out-patients were treated. Of 5,875 patients admitted to hospital 1,721 were born in Ireland—29 per cent. The next highest number (1,354) represents Bostonians; the British Provinces contributed 640; England, 297; Scotland, 90; 772 in-patients died.

"Of all patients admitted, 314 died within forty-eight hours after admission. This number is remarkable as showing the serious and fatal character of a large number of patients received (*sic*), and indicates the character of our work. The rate of mortality is 12·3, which is the largest

in the history of the hospital. If from the total of 772 deaths we deduct 314 who were brought to the hospital in a dying condition, and 176 who died of diphtheria, we have a remainder of 490 deaths, which is only ·06 per cent. mortality. This shows that the large death-rate is mainly due to two classes of patients as above-named."

The period of training for nurses is two years. Probationers receive ten dollars a month (except the first) during their first year, and fourteen in the second—not as wages, their education being considered a full equivalent for their services—but to meet cost of uniform, &c. "Each nurse on day duty is allowed one hour after 2 o'clock p.m. for rest and recreation, one half day after 2 p.m. each week, and four hours on Sunday. Two weeks' vacation is allowed each year. . . . Nurses on night duty are required to be in bed until 4 p.m. Nurses may be called upon for four months' night duty during the two years' training."

Surgery enjoys the lion's share—eight papers out of twelve—in the "Medical and Surgical Reports of the Boston City Hospital for 1888," and Dr. Cheever occupies 56 pages with a series of "Surgical Cases," under which is included an analysis of 333 cases of injury to the head, treated in the decade 1877–86. We observe that 78 of these were fractures of the base of the skull, with 19·23 per cent. of recoveries. Dr. Franklin H. Hooper's paper on "The Mechanical Effects of Adenoid Vegetations in Children," draws attention to a not uncommon condition of great pathological importance, imperfectly appreciated—the obstruction of the naso-pharyngeal cavities with "highly vascular, glandular growths, called *adenoid vegetations*," preventing normal respiration through the nostrils. Twenty years ago Wilhelm Meyer, of Copenhagen, described this condition, but without practical result. Dr. Hooper claims to have been the first in New England to operate for its relief in June, 1885, and since that date 240 cases have passed through his hands. He maintains that the mechanical obstacle which these growths offer to the natural respiration "may lead to lack of development of the bones of the face, deformities of the upper jaws, irregularity of the teeth, misshaped chest-walls, deafness, and defective speech," and he illustrates with six woodcuts the characteristic facies of the affection. Removal of the growths is necessary and easy, and they do not recur. Drs. Knapp and Bradford report a case in which the size and position of a cerebral tumour were accurately inferred from symptoms. The tumour was removed—the operation being completed in one hour—but the patient died three-quarters of an

hour after. The authors have collected twenty-four cases, in which the skull was opened for the removal of intra-cranial tumours. The first, in which no external signs of the presence of the growth were apparent, being Godlee's, in November, 1884. Of these (which are summarised in the paper), the tumour was removed in fifteen; found, but not removed, in one; not found in four; and in the remaining four, cysts were removed or evacuated. There were eleven deaths, 45·83 per cent. The whole subject is very fully discussed in this interesting and valuable essay. Dr. Bradford subsequently contributes a short paper on amputation at the hip-joint, which had been performed six times in the hospital, with only one death attributable to the operation, since last Report. Dr. Rotch's "Notes on Infant Feeding" contains much that is useful.

Catalogue of Lewis' Medical and Scientific Library, including a Classified Index of Subjects, with the Names of those Authors who have treated upon them. New Edition. Revised to Mid-summer, 1887. London: Lewis's Library. 1888.

This volume, of nearly 300 pages, royal 8vo, although not to be classed amongst amusing books, is certainly entitled to be included amongst the instructive and useful ones. In a library a good volume of reference is of incalculable value, and writers are saved much trouble and time by the possession of a good catalogue such as Lewis's. The typography and binding reflect credit on all concerned in the work.

The Human Foot: its Form and Structure, Functions and Clothing. By Thomas S. Ellis, Consulting Surgeon to the General Infirmary at Gloucester. London: J. and A. Churchill. 1889.

Mr. Ellis' work was written to meet a distinct want—to wit, to form a book of reference for the City and Guilds of London Institute for the advancement of Technical Education, on "The Anatomical Construction and Natural Functions of the Human Foot."

An accident that seriously damaged one of his own feet first caused Mr. Ellis to make a special study of the human foot, and finally resulted in producing the excellent and beautifully illustrated work before us—a book in which every page tells of careful thought

and thorough mastery of the subject. The illustrations are beautifully done, and are well selected for making the author's views intelligible.

We heartily recommend the book to our readers.

SOME PERIODICALS.

1. *The Birmingham Medical Review; a Monthly Journal of the Medical Sciences.* Edited by Robert Saundby, M.D. Edin. *Gynæcology*, Lawson Tait, M.D., LL.D. F.R.C.S. Eng. *Surgery*, Gilbert Barling, M.B., B.S. Lond., F.R.C.S. 8vo. Pp. 64.
2. *Occidental Medical Times.* Edited by James H. Parkinson. Sacramento: A. J. Johnston & Co. 8vo. Pp. 56.
3. *The Times and Register; a Weekly Journal of Medicine and Surgery.* Published under the auspices of the American Medical Press Association. New York and Philadelphia. Pp. 24.

Since we last noticed a group of our professional contemporaries, some others have "swum into our ken," of which we have a few words to say:—

1. Birmingham maintains a monthly Medical Review, now in its twelfth year. The name of Lawson Tait as a collaborator is, in itself, a guarantee of vigour and value; and the contents of the number before us (Aug., 1889) fulfil the expectations raised. They include two original articles, a reported case, periscope (under four heads—renal and urinary diseases, surgery, gynæcology, and anatomy), notices of eleven books, miscellany, and a list of new medical works. The original articles are on "Purpura" (by the Editor), and on that inexhaustible subject, the "Principles of Infant Feeding," by Dr. Alfred H. Carter. In these days when there appears to be a great deficiency of human milk, the best substitute for it is a matter of great importance, and we are glad to find Dr. Carter recommending Dr. Meigs's formula as best fulfilling the conditions required.[a] Condensed milk, especially the sweetened

[a] The directions will bear repetition. Dissolve $17\frac{3}{4}$ drachms of milk-sugar in a pint of water. Cork solution carefully and keep in a cool place. For each meal, for each ounce of food, add two teaspoonfuls of cream, one of cow's milk, and two of lime-water, to three of the syrup. The cream of this formula is hand-skimmed, containing 15 to 20 per cent. of fat. "Separated" cream contains 30 to 35 per cent., and should be diluted with an equal bulk of water.

preparations, diluted seven times with water, answer well in many instances; but they are deficient in fat, and to this deficiency Dr. Carter attributes a tendency to rickets in infants so fed, which he believes he has observed.

From the miscellany of this number we extract the following remarkable anticipation of the modern view of the causation and the communicability of phthisis. It purports to be an extract from a book by Benjamin Martin, M.D., published in 1720, entitled "A New Theory of Consumptions," and is communicated by Mr. T. Law Webb, of Trowbridge, Shropshire:—

"The *original* and *essential Cause* then, which some content themselves to call a vicious Disposition of the Juices, others a salt Acrimony, others a strange Ferment, others a malignant Humour (all which seem to me dark and unintelligible) may possibly be some certain Species of Animalcula or wonderfully minute living Creatures, that, by their peculiar Shape, or disagreeable Parts, are inimicable to our Nature; but however capable of subsisting in our Juices and Vessels, and which being drove to the Lungs by the circulation of the Blood, or else generated there from their proper Ova or Eggs, with which the Juices may abound, or which possibly being carried about by the Air, may be immediately convey'd to the Lungs by that we draw in, and being there deposited, as in a proper *Nidus* or Nest, and being produced into Life, coming to Perfection, or increasing in Bigness, may by their spontaneous Motion, and injurious Parts, stimulating, and perhaps wounding or gnawing the tender Vessels of the Lungs, cause all the Obstruction, Inflammation, Exulceration, and all other the *Phœnomena* and deplorable Symptoms of this Disease.

"It seems probable that the Animalcula or their Seed, which we have suppos'd to be the Essential Cause of a *Phthisis* or Consumption of the Lungs, are for the most part either convey'd from Parents to their Offspring Hereditarily, or communicated immediately from distemper'd Persons to sound ones who are very conversant with them.

"So that it is very likely, that by an habitual lying in the same Bed with a Consumptive Patient, constantly Eating and Drinking with him, or by very frequently conversing so nearly, as to draw in part of the Breath he emits from his Lungs, a Consumption may be caught by a sound Person; for it may be reasonable to suppose that if the Blood and Juices of such distemper'd People, be charg'd with vast Quantities of *Animalcula*, as I have conjectur'd then their profuse Sweats, and their Breath also, may be likewise charg'd with them, or their *Ova* or Eggs, which by that means may possibly be convey'd into the Bodies of those who lie, or are most conversant with them.

"It may here probably be objected that if this is so, few that come

near a Consumptive Person would escape that Distemper; but in Answer to this I imagine that *slightly* conversing with Consumptive Patients, is seldom or never sufficient to catch the Disease, there being but few if any of those minute living Creatures or their Eggs communicated, and those that are, may not perhaps be produced into Life or nourished and increased; besides we may imagine that some Persons are of such an happy Constitution, that if any of the *Ova* happen to get into their Bodies, they may likewise be quickly forced out again before they are produc'd into Life; or else be wholly destroy'd by finding the Soil unsuitable."

2. The *Occidental Medical Times* comes to us from California. We examined the numbers which have reached us, to see whether the subject of leprosy was exciting as much attention in the Western United States (where, from the large infusion of Chinese population, we think the disease more likely to take root), as it has lately roused in England. We found, in last April's number, an elaborate paper on "Leprosy in Hawaii," by Dr. Sutliff, of Sacramento. The evidence for the communicability of leprosy through intercourse with lepers is very strongly put. Few, we apprehend, doubted that the disease was transferable through a broken surface; and, therefore, Dr. Arning's experiment, which settles the question, is not quite so important as it seems to the author of the paper. It will be remembered that Dr. Arning (who has made a special study of the disease in the Hawaiian Islands), after inoculating unsuccessfully rats, hogs, a monkey, and pigeons, obtained permission to try the experiment upon Keanu, a criminal under sentence of death, who consented to submit in consideration of commutation of his punishment to penal servitude for life. Having satisfied himself of the absence of family leprous taint or existing leprous disease, and ensured freedom from contact with affected persons, he inoculated Keanu on the 30th of September, 1884. Up to the middle of March, 1885, the bacillus lepræ was found in large numbers in the neighbourhood of the inoculation. Subsequently the number of bacilli diminished, but they were still present fourteen months after the operations, although no other symptom of the disease could be detected. Later, however, Keanu became a leper, and a leper he remains. The author (who was Government Physician on the Island of Main for four years) gives most interesting details of his experience in connection with leprosy. He discards the idea of identity of leprosy with syphilis; and the complete distinctness of the two diseases may, we think, be taken as estab-

lished. He sums up the results of his large experience and careful observation in the following conclusions :—

"1. The history of the disease in Hawaii proves it to be contagious to the majority exposed ; a few cases standing out against its influence, just as we find in other diseases where contagion is not questioned.

"2. The leper may or may not have syphilis, but the diseases are distinct; he who has never had a sore may be far gone with leprosy contracted late in life ; treatment, that does so much for the syphilitic is powerless in the case of the leper.

"3. Personal contact is not safe, as the disease may be transmitted thereby, Hawaii showing many examples where heredity cannot account for its presence, it follows that sexual contact is still more likely to infect.

"4. Inoculation has been successfully performed, the convict Keanu being a leper.

"5. The germs show great resistance to putrefaction, and retain their power for ill for long periods, rendering inhumation unsafe.

"6. Treatment of any kind has, so far, proved useless. Improvement which has been noted in many cases is only temporary.

"7. The only remedy is the early and absolute isolation of all cases.

"8. Segregation has been but a partial check in Hawaii for the reason that only a part of those affected have been taken from their homes.

"9. The doctrine of non-contagion has done a deal of harm, and should be met with a prompt and earnest protest from those who know the facts as they are to-day. Free discussion will do much to dissipate this erroneous belief."

"The question," he says, "becomes a practical one to us in California, when we consider that Hawaii is our next-door neighbour, that her children often come to visit us, and that they are not always clean. Furthermore, our climate does not differ very greatly from theirs ; we have a good many people about as filthy as many of the natives, and just as immoral. If leprosy is introduced here the only reason why it may not spread as in Hawaii is, that all diseases take hold of a new people with greater force than where a certain toleration has been forming through the ages. Still, the white man does contract it ; but for our comfort we can see that they are only those whose business or pleasure bring them in personal contact—the instances, so far, being two priests, a physician, and many libertines."

Four cases, which came under Dr. Sutliff's observation in California, are appended. One, a Hawaiian, had been eleven years in America, and had been free (apparently) from disease on arrival. The second patient, a mulatto, had never resided out of the States,

nor out of California for thirty-six years, except for a few months twenty-five years before. He committed suicide when he knew what was wrong with him. The third was a native American, who had never been out of the State, who never remembered having seen a leper, but who in boyhood had played with Hawaiian boys. The fourth, also a native Californian, who had never been out of the State, had, previously healthy, suffered from axillary abscess and "ringworm" after vaccination. His father and another person, vaccinated from him, had "ringworm" also. The first leprous symptom, enlargement of the ear-cartilages, was observed a year after the vaccination. In some subsequent editorial remarks on the subject, it is stated that the existence of isolated cases of leprosy in California has long been known, but that only recently have whites been attacked, Chinese and Hawaiians alone being the victims. It is believed, moreover, that many cases remain unrecognised, especially in country districts; and protective measures are recommended, such as rigid inspection of immigrants, especially from Hawaii and China, supervision of Hawaiians and Chinese after admission, and absolute isolation of detected cases.

We observe that a Bill appropriating £1,600 for a medical college in San Francisco, in connection with the State University, passed the Assembly, and was "amended" in the Senate by the insertion of a provision for a chair of homœopathy. The Assembly refused to concur, and the Senate gave way, but the Bill was vetoed by the Governor. We note also that a movement is on foot to induce the three medical colleges of the State to insist upon a fourth year of medical study for degrees. California is already in advance of many other States in demanding a minimum of three years' studies.

3. The *Times and Register* seems to be the result of the amalgamation of three distinct periodicals; the contents of the number before us call for no special notice. The following leading article may be extracted as a sample of editorial playfulness:—

"THE DENTURE OF THE FUTURE.

"In the course of an article in *Items of Interest* on Teeth from a Zoölogical Standpoint, we notice this: 'Civilised man with his cooked food and knives and forks, has little or no use for projecting cuspids or cutting teeth, and the man of the future will doubtless have less teeth than we have.' This is, of course, the scientific way of looking at the matter. It is in accordance with one of the great principles of evolution—if an

organism has no further use for a certain part, that part atrophies, and in time is wanting. If posterity will not use their incisor teeth in taking bites, these teeth will disappear; just as the canines are now waxing less, from the fact that we do not have to make a meal off our neighbour's cat, tearing it limb from limb after the manner of our blue-blooded prehistoric ancestors. If these teeth, however, shall in the future be counted among the missing, our descendants will hardly be winsome looking to our spiritual eyes, especially when they smile, and the small boy will not be able to whistle through his teeth.

"But we do not take this gloomy view of futurity with its apprehended dental gap; and although it would doubtless please the heart of many a young mother to hear that the 'coming man' will not have to go through the trying process of cutting his eye teeth, mature deliberation has convinced us that this famous man will not present anteriorly two smooth Venetian-red gums, but that these gums will be armed with teeth, big molar teeth, each with four roots and five cusps.

"This prophecy is based upon another great modern biological principle—the survival of the fittest. Mankind is naturally gregarious; and as the years go by the tendency is noticed to become more and more strong for them to congregate in the large towns and the great cities. Many in these large places eat at restaurants.

"Those who dine at home, who fare sumptuously every day on liquid soups, soft entrees, tender meats, succulent vegetables, and the like, must, in the course of time, under our first great principle, degenerate into a class of beings having few or no teeth, because there is no use for such organs.

"These foods being easy to digest will give the stomach an easy time of it, so that this valuable organ is likely to grow lazy and worthless, and in the end our sumptuously fed people will be served with foods, each dressed with its appropriate digestant; pepsin, pancreatin, ingluvin, oxgall, or what not, and they will be a weak and puny set.

"Not so with the restaurant-fed man; he toils while earning his quarter, and he sweats while eating it up. His masseters stand out like columns on his face, and his temporals are as the wings of a dragon. His molars must come together with the resistless power of a hydraulic jack, ere his beefsteak is impressed. Even after the expenditure of enormous muscular effort that bite is only imperfectly masticated, and his gastric juice and his pancreatic juice and his bile must be of well-nigh poisonous strength before they are able to separate the coherent molecules of that leathery mass. There will be giants in those days. Evolution is a slow process, but the restaurant-feeders will, in the course of ages, develop into a race that will have nothing but molars all the way around, as many sets as the individual may require, and each separate tooth formed of irresistible adamant."

Leprosy as a Cause of Blindness, with Notes of Forty-one Cases. By C. F. POLLOCK. London: J. & A. Churchill. 1889. 8vo. Pp. 88.

IN the present day, when leprosy in all its forms is attracting so much attention from the public and the medical profession, a volume, such as we have before us, is most timely.

Dr. Pollock's name is familiar to all ophthalmologists, through his most readable book on the "Histology of the Eye," which we reviewed some years ago. We find in the present work the same clear exposition of the conditions found in the various affections of the eyes and lids resulting from leprosy.

Dr. Pollock found, amongst the patients whom he examined in the Leper Hospitals at Bergen, Throndhjem, and Molde (in Norway), that "both elephantiasis tuberculosa, with its nodules, and elephantiasis maculosa, with its smooth patches, though occurring separately, were sometimes present in the same person, or had been present at different periods, and both yielded many anæsthetic patients. Local anæsthesia," he says, "is the usual fate of those who live long enough, and it is not one of the prominent symptoms. All stages and forms were mingled. Of the 41 blind patients there were 11 cases of tuberculated, 27 of anæsthetic, and 3 of mixed leprosy; and of the middle series, though marked as anæsthetic, no fewer than 6 showed pronounced leprous tubers of the eyes." All the external structures of the eye seemed to be liable to special leprous disease, and the iris, ciliary body, and chorioid were also in many cases the seat of leprous inflammation.

Ectropion, from paralysis of the orbicularis, ulceration of the eyelids, infiltrations of the cornea, leprous tubers of the cornea, ulcers of the cornea, leucomata, staphylomata, softening of the eyeball, shrinking of the eyeball, hardening of the eyeball, and xerosis, were all found; also leprous iritis, with nodules in it, filling more or less the anterior chamber.

The processes in leprosy, which lead to blindness, are commonly symmetrical. The disease of the eyeball is largely ciliary in origin. Infiltration of the cornea starts from the tissues of the corneo-scleral junction, and spreads from the periphery forwards towards the centre in the superficial layers; tubers may do the same.

Tubers arise in the deep parts of the corneo-scleral junction, and destroy the posterior layers of the cornea, into which they extend. The anterior chamber may be invaded from the angle between the

cornea and iris. The iris is attacked from its periphery, and the ciliary body is often involved, and from this region also the disease passes to the neighbouring portion of the choroid, and the ora serrata of the retina. An eye once seriously involved may be looked upon as doomed, as there is no tendency to recovery.

There is a brief summary of all the cases he has seen appended to the volume, which will be found useful to anyone wishing to specially work up the various effects of leprous inflammations on the eye.

Select Methods in the Application of Nitrous Oxide and Ether: a Handbook for Practitioners and Students. By Frederick Hewitt, M.A., M.D. Cantab.; Instructor in, and Lecturer on, Anæsthetics at the London Hospital; Administrator of Anæsthetics at Charing Cross Hospital and the Royal Hospital for Children and Women; Assistant Anæsthetist at the Dental Hospital of London. London: Baillière, Tindall & Cox.

Mr. Hewitt, in the few pages of his excellent little book, conveys a great deal of useful information, and adduces many good reasons for his preference for nitrous-oxide and ether.

His description of the apparatus recommended is much aided by some well-executed illustrations. The practical nature of the book will, we have no doubt, make it a favourite with the profession, especially as Mr. Hewitt's large experience makes him well qualified to act as a guide on the question of anæsthetics.

A Guide to the Alterations in the British Pharmacopœia (1885), *comprising an Epitome of the Changes and an Account of the new Preparations, their Characters, Uses, Doses, and Modes of Administration, together with a Therapeutical Commentary.* By Prosser James, M.D., Lecturer on Materia Medica and Therapeutics at the London Hospital; late Physician to the Hospital for Diseases of the Throat, &c. Third Edition. London: J. & A. Churchill, New Burlington-street. 1889.

The ever-changing character of the pharmacopœial preparations calls for such a book as this, but it is given to few authors to make so intelligible the many changes of the standard authority in such a readable style.

Omitting nothing that the practitioner should know, Dr. James

has yet succeeded in producing a book written in such a pleasant and cheerful phraseology that it does not become tiresome.

We commend it to our readers as a book which may be safely taken as a guide in selecting a remedy, and as one containing many useful therapeutic hints.

The fact that a third edition is demanded within a period counted by weeks tells how much the profession appreciate the book.

Cancer and its Complications. By CHARLES EGERTON JENNINGS. F.R.C.S., Eng.; M.S., M.B.; Author of Transfusion of Blood and Saline Fluids. London: Baillière, Tindall, & Cox. 1889. Pp. 154.

THE chief points which this work is intended to elucidate are the following:—

1. Cancer is a local disease.
2. Early and complete excision is the proper treatment.

The early chapters treat of cancers generally, including carcinomata and sarcomata, and of their classification. In this there is nothing at all new or worthy of reference, and many of the statements are not particularly correct—*e.g.*, the term cylindroma is applied entirely to the ordinary form of columnar-celled epithelioma, such as is generally found in the intestine; and the variety of sarcoma called cylindroma is not referred to at all. Again, in the description of round-celled sarcomata we read "the vessels are generally mere clefts between the cells." This they certainly are not, but have distinct although thin walls.

We next have a long chapter on the question whether cancer is a local disease or not. It consists chiefly of extracts from speeches made at a debate at the Pathological Society of London in the year 1874, on which occasion Mr. Campbell de Morgan read a paper on Cancer, and thereby, according to Mr. Jennings, "the apple of discontent was thrown down."

We have heard of an apple of discord; an apple of discontent is something novel. We are surprised in a chapter on the nature of cancer to find no reference to any pathologist except to those who took part in this debate. Colnheim, and all others, who had not the good fortune to be present, are ignored. This chapter, therefore, is of no great value.

The rest of the book consists of descriptions of cancer of the

various parts and organs of the body, breast, skin, uterus, &c., with remarks on treatment, operative or otherwise. Mr. Jennings is strongly in favour of early and thorough excision of all malignant growths; but he does not in this book add much, if at all, to our knowledge of their symptoms, morbid anatomy, or of the best operative procedure for their removal. We must, however, note with pleasure one statement on cancerous cachexia, the truth of which is, we think, not sufficiently recognised by medical men. We read (p. 4)—"Patients suffering from cancer are often found in the best general health, and it is only in the ulcerative stage, when deleterious or putrefactive products may become absorbed, that constitutional disturbance may arise. Such a condition is termed the cancerous cachexia, but there is nothing special about it."

With this we cordially agree; some of the fattest old women we have ever seen had large cancerous tumours in their breasts. Other causes, however, besides the absorption of deleterious or putrefactive products, will produce cachexia: inability to digest and absorb food, as in cancer of the alimentary canal; pain, sleeplessness, exhausting discharges, all these will help to cause it. To sum up our opinion of this book:—We cannot recommend it to anyone; it contains little or nothing that cannot be better learned from any of the standard works on surgery and pathology. Its perusal leaves on our mind the impression that it was written, not so much to impart information or to diffuse knowledge, as because Mr. Jennings wanted to compile and publish a book.

Diseases of the Eye; a Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S. Edinburgh: Young J. Pentland. 1889.

This handsome volume is one of the most attractive, both externally and internally, of the many text-books of ophthalmology which adorn our book-shelves, and the publishers are to be congratulated on adding so satisfactory a "second volume" to their "Medical Series."

It consists of 650 pages of excellent print, and 144 illustrations, many of them coloured and drawn from Nature by Dr. Tatham Thompson, of Cardiff. They are all printed with the text by a new and admirable process, instead of being relegated to plates at the end of the volume.

In his preface, the author states that—"Except in cases where

it has some direct bearing on the treatment to be adopted, I have either altogether omitted any mention of pathological anatomy, or have devoted a relatively small space to it."

The work is divided into seventeen chapters. The first thirteen are included in section I., in which "the basis of description given is entirely clinical," and treats of all diseases of the eye, except "Errors of Refraction and Accommodation" and "Affections of the Ocular Muscles." These, with a chapter on the "Examination of the Eye," form section II. In this section the author seems in his element, and rolls off his mathematical formulæ in a most surprising manner. To those, however, who take the trouble of working out the problems much of the apparent intricacy disappears on closer inspection, whilst for those who care not but for the practical outcome of mathematical investigations the possibility exists of skipping all the small print, and finding in the large print, in concrete form, the "conclusion of the whole matter."

Most of the illustrations are decidedly good and instructive, but there are some very glaring exceptions. Probably, the very worst drawing of its kind that was ever put into a book is to be found on page 128. It is entitled "Iris bombé shown in section, slightly diagrammatic." *Slightly diagrammatic!* If it were wholly diagrammatic it would not excuse the misleading incorrectness of the figure. The iris in section looks like a pair of brindling worms whose hinder parts had been squashed (the ciliary bodies); the lens is out of all proportion small, and the suspensory ligament requires explanation.

Fig. 79 (from Helmholtz) might, we venture to think, have been improved. Of the coloured drawings, Fig. 29—"Subconjunctival Dislocation of the Lens"—even after much study, still leaves one in doubt as to where the lens is to be found. Fig. 44—"Glaucoma, External Appearances"—is not very happy, and the *vasa abdominalia* would be more characteristic if they were not so attenuated at their point of exit from the interior of the globe. Fig. 43—"Coloboma of the Choroid"—though evidently drawn from the inverted image, is not stated to be so, as others are, and might therefore mislead the casual reader. But, with very few exceptions, the drawings are the best that we are able to find in any corresponding hand-books.

The text almost all through is written in a pleasant, clear, and readable style; but it contains here and there a few sentences that Lindley Murray would not quite approve, and words newly

coined to express what could be better expressed by already existing terms. Most of the defects of diction result, no doubt, from careless reading of the proofs, and, in a future edition, will be corrected. They in no way interfere with the real merits of the book, but strike one only as inelegancies.

With the arrangement of the chapters we have little fault to find. "Glaucoma," "Foreign Bodies in the Eye," "Sympathetic Ophthalmitis," and "Intra-ocular Tumours" each have separate chapters devoted to their consideration, also the "Examination of the Eye." It seems a pity that this chapter, which deals with subjects like the "Inspection of the lids," Intra-ocular Tension," and "Oblique Illumination," should not be read until so late; for, to the student studying ophthalmology practically, these must be learned before any progress can be made.

We shall not criticise the opinions contained in the text; for, though we cannot agree in many of his rather dogmatically stated methods of treatment, &c., such points are, to a large extent, matters of opinion and personal experience; but we wish to recommend this book as one which can be read with both pleasure and profit, not only by the student beginning the subject, but also by the specialist practising ophthalmology. It must be regarded as a decided and creditable addition to British ophthalmic literature.

Report on the Civil Medical Department of His Highness the Nizam's Government for 1888 (1297 *Fasti*), *including the Report of the Hyderabad Chloroform Commission.* By Surgeon-Major E. Lawrie, Residency Surgeon, Hyderabad. Hyderabad: Printed at the Residency Government Press. 1889.

The Report on the Civil Medical Department of His Highness the Nizam's Government is this year of more than ordinary importance, as it contains the Report of the Hyderabad Chloroform Commission. In reality, however, the Chloroform Commission is but a small part of the Report, which enters very fully into the medical provision made throughout the Nizam's dominions for the prevention and cure of disease. During the year past we learn that many new dispensaries and hospitals were opened, and that the natives are daily becoming less prejudiced against the methods adopted for their welfare. The out-patients to the Nizam's hospital during 1888 numbered 307,612, and 3,838 cases were treated as indoor patients.

Hakims, native doctors, who are educated at the Hyderabad School, who have been many years in up-county stations, and have lost in touch with modern advancements in medical science, are recommended to attend a six months' post-graduate course at the Afzulgunj Hospital—a fact that tells how much care is given to the medical department of His Highness the Nizam's Government.

The total indifference of the natives to sanitary arrangements is told by the statement that "the people, after contaminating the water in every possible way, drink it and call it good." And the following recommendations can hardly be called too strict:—

"(*a*) No washing or bathing should be allowed in drinking-water wells."

"(*b*) No washing or bathing, or other means of contamination should be permitted in tanks which are used for drinking purposes."

Vaccination meets with much opposition in Hyderabad, the villagers being fertile in objections to the process—one of the objections being "that vaccination is a deep scheme of the Sirkar for converting, by some mysterious 'jadu,' the lymph collected from the children's arms into potential energy for working the state railway."

On the approach to a native village of the Government Vaccinator, "mothers seize their children, and hurry away to the fields, where they remain until the dreaded visitor departs. Sometimes the villagers resist by force the intrusion of the vaccinator and his chaprasi, and occasionally even assault them."

The regulation that in future "Vaccinators (are) to be furnished with a policeman or tahril chaprasi as a guard," is not unnecessary.

The surgical work done in the dominion is most creditable—both to the European surgeons resident there, and to the hakims whom they have educated. Last year 1,678 major, and 12,199 minor, operations were performed. Two ovariotomies, both successful, were performed by hakims.

Cholera is credited with 1,160 cases during the year in the City of Hyderabad, of these 41·29 per cent. died. The sanitary condition of the city may be judged of from the statement that the river, which is the source of drinking-water, "is used as a latrine, and as a place for washing foul and filthy clothes by everybody within its reach. Not only is the river used as a latrine, but every year, when its bed is dry, it is plastered all over thickly with every

conceivable kind of human and animal manure, for the purpose of stimulating the production and growth of melons."

One of the most interesting statements in the Report is that on the value of tartar emetic, in $\frac{1}{16}$th of a grain dose, frequently repeated, in enteric fever. Dr. Lawrie considers it as "one of the most valuable drugs we possess, and as useful in local inflammations as quinine is in malarious fever." In enteric fever he found that "it cuts the disease short with such certainty that it almost appears doubtful whether the lesion of typhoid is specific, or is not rather incidental or adventitious."

The Chloroform Commission was presided over by Dr. P. Hehir, with whom were associated Messrs. Chamarette and Kelly. And the first recommendation of Dr. Lawrie was, that "the attention of the Commission should be specially devoted to the effects of chloroform on the circulation and respiration."

The experiments were divided into the following four series, in which the dogs were:—

I. Anæsthetised until death took place. Eight experiments recorded.

II. Chloroformed with large doses of the drug, and the effects of artificial respiration noted. In this series seventy-five experiments are recorded.

III. Gradually anæsthetised with drachm doses of chloroform, with and without artificial respiration. Seventeen experiments recorded.

IV. Poisoned rapidly with large doses of concentrated chloroform vapour, as far as possible without admixture with air. Forty-one experiments recorded.

The animal was considered to be completely under chloroform when, with the cessation of the conjunctival reflex, the general muscular system was relaxed. The chloroform used was that of Messrs. Duncan and Flockhart's make.

The essential statements in the Report are:—

"I. In no case, whether the chloroform was given in the strongest doses when freely admitted into the lungs, or in moderate doses spread over a long period, was syncope produced; nor was life destroyed by chloroform arresting the action of the heart. In every case respiration ceased before the action of the heart, and in every case without exception death was due to the failure of the respiratory function. *It was not found that chloroform exerted any depressent action upon the heart*, except such as might be expected from the interference with the respiration, which must

occur during the inhalation of any anæsthetic which affects the respiratory centre; and the heart never became dangerously affected until after the breathing had stopped.

"II. The Commission found that there was little or no tendency to a cumulative effect in chloroform administration in dogs as long as the process of respiration was not interfered with. *When once anæsthesia was produced, provided the respiration was kept up, there was no cumulative effect, and the chloroform was rapidly eliminated.* The Commission, therefore, concludes that chloroform may be given to dogs by inhalation with perfect safety, and without any fear of accidental death, if only the respiration, and nothing but the respiration, is carefully attended to throughout."

Of chloroform Dr. Lawrie says it "may be given in every case requiring an operation with absolute safety."

Whatever may be the outcome of Dr. Lauder Brunton's visit to Hyderabad, the effect on the profession of the Hyderabad Chloroform Commission cannot be other than beneficial. Nothing has more retarded medical progress than an undue deference to authority, and the recent utterances of the London Schools and the *Lancet* on ether *versus* chloroform were much too dogmatic and dictatorial.

The authority of Galen crushed out original research for centuries, and reduced medicine to the most degraded position she ever held.

The Clinical Use of Prisms, and the Decentering of Lenses. By ERNEST E. MADOX, M.B. Bristol: John Wright & Co. London: Hamilton, Adams, & Co. 1889.

THIS little octavo volume of 113 pp. is nicely got up, and clearly illustrated.

In his preface, the author says—"Its first object was to communicate a series of aids to precision in the use of prisms, worked out during several years, which, it is to be hoped, will be of some service in this difficult by-way of ophthalmic practice. They have, however been introduced by a sketch of the simplest properties of prisms, and supplemented by a brief account of their chief clinical uses."

To those who wish to go further into the matter than most of the smaller text-books on eye diseases do, will, in the little volume before us, get much to assist them in their investigations.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.

By Sir Charles A. Cameron, M.D., D.P.H. (Cambridge); M.K.Q.C.P.I.; Past President and Professor of Hygiene and Chemistry, R.C.S.I.; President of the British Public Health Medical Society; Vice-President, Institute of Chemistry; Vice-President, Society of Public Analysts; Examiner in Sanitary Science, Cambridge and the Royal Universities; Medical Officer of Health, Dublin; Hon. Member, Societies of Hygiene, France, Belgium, Paris, Bordeaux, &c., &c.

(*Continued from p. 340.*)

CONTRIBUTION TO A PHYSIOLOGICAL STUDY OF ABSINTHE LIQUEUR.

At a meeting of the Academy of Medicine of France, held on the 10th of September, 1889, Messrs. Cadéac and Albin Meunier submitted a Memoir on a Physiological Study of Absinthe Liqueur. The Academy, thereupon, appointed a Commission, composed of Messrs. Ollivier and J. V. Labordie, to examine and report upon this Memoir. At the meeting of the Academy, held on the 1st October, the Commission presented their report. Messrs. Cadéac and Meunier's researches seem to those gentlemen to lead to the conclusion that the essence of absinthe liqueur does not possess the terrible toxic properties generally ascribed to absinthe. The essence is the essential principle of the liqueur; but it seems that it usually contains other ingredients, especially the essences of aniseed, coriander, fenugreek, &c. Admitting the existence of what has been termed *absinthism*, the authors contend that the proper designation for that affection should be *anisism*. If the aniseed be eliminated from the liqueur, or reduced to a very small proportion of the liquid, the absinthe liqueur will then be found non-toxic, and will but impart to those who imbibe it the "amiable quality of hilarious excitement"!

The reporters having explained the authors' views proceeded to

criticise them. In 1864 Dr. Magnan published, in *L' Union Médicale*, Vol. XXIII., p. 250, a paper on "Accidents Caused by the Abuse of Absinthe Liqueur." The principal substances, he says, which compose this liqueur are, beside alcohol, the essences of aniseed and absinthe. He says that he disregards other ingredients, such as badeane and angelica root, because their proportions are very variable, and because their action does not cause any of the injurious effects produced by the liqueur. He regards the aniseed, absinthe, and alcohol as being the only constituents which are of importance, and he experimented with each of them separately. He found the aniseed innocuous. The enormous dose of 22 grams of aniseed essence injected through the œsophagus into a dog's stomach caused no vomiting, diarrhœa, or convulsions; the only effect noticeable was an accelerated respiration.

In the *Gazette des Hôpitaux*, 1869, pp. 310, 334, &c., Magnan again discusses the subject of the toxicity of absinthe liqueur, insisting upon the innocent character of the aniseed ingredient and the poisonous one of the absinthe. He gives fresh proofs of his views before the International Congress for the study of questions relating to alcoholism.

Dr. Labordie, one of the Commissioners, has himself experimented with the essence of absinthe. He administered, subcutaneously, to a guinea-pig, weighing 400 grams, a gram of essence of absinthe, and to a second guinea-pig, of about similar weight and age, a gram of essence of aniseed. Within barely five minutes the first animal was in violent convulsions, having the characteristics of an epileptic attack, and died asphyxiated in about an hour. The second animal squatted in a corner, became drowsy, but was easily aroused, but exhibited the want of co-ordination in movement, which is observed in drunkenness; no convulsive signs were observed. If the guinea-pig succumbs to the dose of aniseed it is not until twenty-four or even forty-eight hours have elapsed.

Messrs. Cadéac and Meunier speak of essence of hyssop—an ingredient of absinthe liqueur—as a powerful agent in producing epilepsy; but this is, according to Dr. Labordie, a very exaggerated statement. One to 2 cubic centimetres injected into a guinea-pig produced increased vivacity, impulsive movements, bilateral cephalic tremblings, and contraction of the paws; ultimately the animal became somnolent—a state which seems to be induced by all the ingredients of absinthe liquers, except absinthe itself.

The reporters conclude—

(1). That absinthe is, of all the essences in the liqueurs of that name, the most toxic and dangerous, and that it alone produces the epilepsy of the absinthe drinkers.

(2). That it is an error, scientifically and practically, to give the titles "beneficent" and "corrective" to absinthe essences.

(3). Absinthe liqueurs, and all liqueurs of the sort said to be aperient, and, above all, the non-purified and adulterated alcohols, constitute poisons the most prejudicial to health.

(4). Absinthism and alcoholism constitute the two great enemies to public health and the improvement of the human race.

TUBERCULOSIS IN MEAT.

There are few subjects relating to public health which at present attract more attention from both medical and non-medical persons than that of tuberculosis in animals used as food for man. The Departmental Commission which last year inquired into the operations of the Contagious Diseases (Animals) Act collected a large amount of valuable information as to the prevalence of this disease in oxen; and the Commission recommended that there should be compulsory notification of the occurrence of tuberculosis in oxen, as has been the case for many years past with respect to pleuro-pneumonia.

In man, phthisis is, in these countries at least, so common and so fatal a malady that everything in connection with its ætiology possesses the highest degree of interest to the whole community. But little doubt is now entertained as to the specific nature of the disease, or its communicability from the affected to the healthy. That there is no essential difference between tuberculosis in man and the ox seems to be all but universally conceded, and it is almost as generally acknowledged that the disease may be transmitted from the ox to man by the media of beef and milk. To what an extent such a transmission takes place in these countries is, however, a point upon which opinion is much divided. There are many medical men who, whilst admitting that the *Bacillus tuberculosis* may be conveyed to man through the medium of meat, assert that such a transmission rarely takes place, and that it is only when a carcase of beef is sensibly affected with the disease that it is unfit for food for man. Those medical men would not condemn the whole carcase of a cow because the bacilli were found in the lungs of the animal. This question has recently

been brought prominently before the public in the lay press, owing to an application made before Sheriff Barry, Glasgow, for an order to destroy some carcases of beef believed to be unfit for human food. In this case there were *Bacilli tuberculosis* in the lungs and the pleuræ and in the udder, but the rest of the carcases presented a healthy appearance, and until lately would have been considered by the Glasgow meat inspectors as fit food for man. Their views, however, have undergone a change since the publication, in July, 1888, of the Report of the Commission on Pleuro-pneumonia in Cattle, in which it is stated that "the chance of the bacilli of tuberculosis being in the flesh or blood of animals affected by the disease was too probable to allow of the flesh of a tubercular animal being used for food, under any circumstances, either for man or the lower animals." The Glasgow butchers seem to have combined in this case for the purpose of securing scientific evidence to combat the evidence adduced by the city authorities, and the proceedings occupied five days. A large number of medical men stated that they believed the meat in question could safely be consumed, but the weight of evidence seems to be on the other side, several pathologists of position expressing their belief in the flesh being dangerous. It is satisfactory to find that the sheriff made the order sought for.

A similar case was brought last month before the Belfast magistrates, who also, after hearing arguments *pro* and *con.*, granted the order sought for.

For many years past I have invariably certified that cows affected with tuberculosis in any organ, internal or external, were unfit for food, and the magistrates have invariably granted orders for the destruction of their carcases. In August last a farmer, who sold a cow affected with tuberculosis to a Dublin butcher, was prosecuted by my direction, and find £5.

The *New York Medical Journal* for October 12th, 1889, contains a notice of a paper by Dr. H. C. Ernst, of Jamaica Plain, Massachusetts, read before the American Association of Physicians, entitled, "How far may a Cow become Tuberculous before the Milk becomes Dangerous as a Food Supply." According to Koch the milk is dangerous only when the disease affects the lacteal tract. Dr. Ernst is making experiments with the view of corroborating or refuting Koch's conclusions, and although the experiments are not as yet completed, but are to be continued for another year, he seems to consider that he may fairly draw the following

conclusions from them:—(1.) That the milk from cows affected with tuberculosis in any part of the body might contain the virus of the disease. (2.) That the virus was present whether there was disease of the udder or not. (3.) That there was no ground for the assertion that there must be a lesion of the udder before the milk could contain the infection of tuberculosis. (4.) That, on the contrary, the bacilli of tuberculosis were present and active in a large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

THE COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES.

The Act for the compulsory notification of infectious diseases, which came into operation on the 30th of August last, is compulsory only in the London districts; but it will, no doubt, be adopted by the great majority of sanitary authorities. It is to be hoped that, wherever it may be adopted, the authorities will enforce its provisions strictly. The diseases enumerated in the Act do not include measles or whooping-cough, but the Local Government Board can, at the request of local authorities, schedule these maladies amongst those mentioned in the Act. Measles causes so many deaths amongst the children of the poor that it would be well to have its notification made compulsory. In Dublin the dwellings of patients affected with this disease are always disinfected when the sanitary authority has heard of the cases. The dispensary medical men report the cases of measles which come under their notice.

The Public Health Committee have, at my request, recommended the Corporation of Dublin to put this Act in force, and, no doubt, it will soon become law in this city. The following are its more important provisions:—

1. This Act may be cited as the Infectious Disease (Notification) Act, 1889.

2. This Act shall extend—

(*a.*) to every London district after the expiration of two months from the passing of this Act, and

(*b.*) to any urban, rural, or port sanitary district after the adoption thereof.

3.—(1.) Where an inmate of any building used for human habitation within a district to which this Act extends is suffering from an infectious disease to which this Act applies, then, unless such building is a hospital in which persons suffering from an

infectious disease are received, the following provisions shall have effect, that is to say:—

(*a.*) The head of the family to which such inmate (in this Act referred to as the patient) belongs, and in his default the nearest relatives of the patient present in the building or being in attendance on the patient, and in default of such relatives every person in charge of or in attendance on the patient, and in default of any such person the occupier of the building shall, as soon as he becomes aware that the patient is suffering from an infectious disease to which this Act applies, send notice thereof to the medical officer of health of the district.

(*b.*) Every medical practitioner attending on or called in to visit the patient shall forthwith, on becoming aware that the patient is suffering from an infectious disease to which this Act applies, send to the medical officer of health for the district a certificate stating the name of the patient, the situation of the building, and the infectious disease from which, in the opinion of such medical practitioner, the patient is suffering.

(2.) Every person required by this section to give a notice or certificate who fails to give the same, shall be liable on summary conviction in manner provided by the Summary Jurisdiction Acts to a fine not exceeding forty shillings.

Provided that if a person is not required to give notice in the first instance, but only in default of some other person, he shall not be liable to any fine if he satisfies the court that he had reasonable cause to suppose that the notice had been duly given.

4.—(1.) The Local Government Board may from time to time prescribe forms for the purpose of certificates under this Act, and any form so prescribed shall be used in all cases to which they apply.

(2.) The local authority shall gratuitously supply forms of certificate to any medical practitioner residing or practising in their district who applies for the same, and shall pay to every medical practitioner for such certificate duly sent by him in accordance with this Act a fee of two shillings and sixpence if the case occurs in his private practice, and of one shilling if the case occurs in his practice as medical officer of any public body or institution.

(3.) When in any district of a local authority there are two or more medical officers of health of such authority a certificate under this Act shall be given to such one of those officers as has charge of the area in which is the patient referred to in the certificate, or

to such other of those officers as the local authority may from time to time direct.

5.—(1.) The local authority of any urban, rural, or port sanitary district may adopt this Act by a resolution passed at a meeting of such authority; and fourteen clear days at least before such meeting special notice of the meeting, and of the intention to propose such resolution, shall be given to every member of the local authority, and the notice shall be deemed to have been duly given to a member if it is either—

(*a.*) given in the mode in which notices to attend meetings of the local authority are usually given, or

(*b*) where there is no such mode, then signed by the clerk of the local authority and delivered to the member or left at his last usual or last known place of abode in England, or forwarded by post in a prepaid letter addressed to the member at his usual or last known place of abode in England.

(2.) A resolution adopting this Act shall be published by advertisement in a local newspaper, and by handbills, and otherwise in such manner as the local authority think sufficient for giving notice thereof to all persons interested, and shall come into operation at such time, not less than one month after the first publication of the advertisement of the resolution as the local authority may fix, and upon its coming into operation this Act shall extend to the district.

(3.) A copy of the resolution shall be sent to the Local Government Board when it is published.

6. In this Act the expression "infectious disease to which this Act applies" means any of the following diseases—namely, small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names—typhus, typhoid, enteric, relapsing, continued, or puerperal, and includes as respects any particular district any infectious disease to which this Act has been applied by the local authority of the district in manner provided by this Act.

7.—(1.) The local authority of any district to which this Act extends may, from time to time, by a resolution passed at a meeting of such authority where the like special notice of the meeting and of the intention to propose the resolution has been given as is required in the case of a meeting held for adopting this Act, order that this Act shall apply in their district to any infectious disease other than a disease specifically mentioned in this Act.

(2.) Any such order may be permanent or temporary, and, if temporary, the period during which it is to continue in force shall be specified therein, and any such order may be revoked or varied by the local authority which made the same.

(3.) An order under this section and the revocation and variation of any such order shall not be of any validity until approved by the Local Government Board.

(4.) When it is so approved, the local authority shall give public notice thereof by advertisement in a local newspaper and by hand-bills, and otherwise in such manner as the local authority think sufficient for giving information to all persons interested. They shall also send a copy thereof to each registered medical practitioner whom, after due inquiry, they ascertain to be residing or practising in their district.

(5.) The said order shall come into operation at such date not earlier than one week after the publication of the first advertisement of the approved order as the local authority may fix, and upon such order coming into operation, and during the continuance thereof, an infectious disease mentioned in such order shall, within the district of the authority, be an infectious disease to which this Act applies.

(6.) In the case of emergency three clear days' notice under this section shall be sufficient, and the resolution shall declare the cause of such emergency and shall be for a temporary order, and a copy thereof shall be forthwith sent to the Local Government Board and advertised, and the order shall come into operation at the expiration of one week from the date of such advertisement, but unless approved by the Local Government Board shall cease to be in force at the expiration of one month after it is passed, or any earlier date fixed by the Local Government Board.

(7.) The approval of the Local Government Board shall be conclusive evidence that the case was one of emergency.

8.— (1.) A notice or certificate for the purposes of this Act shall be in writing or print, or partly in writing and partly in print; and for the purposes of this Act the expression "print" includes any mechanical mode of reproducing words.

(2.) A notice or certificate to be sent to a medical officer of health in pursuance of this Act may be sent by being delivered to the officer or being left at his office or residence, or may be sent by post addressed to him at his office or at his residence.

9. Any expenses incurred by a local authority in the execution

of this Act shall be paid as part of the expenses of such authority in the execution of the Acts relating to public health, and in the case of a rural authority shall be general expenses.

11. A payment made to any medical practitioner in pursuance of this Act shall not disqualify that practitioner for serving as member of the council of any county or borough, or as member of a sanitary authority, or as guardian of a union, or in any municipal or parochial office.

Where a medical practitioner attending on a patient is himself the medical officer of health of the district, he shall be entitled to the fee to which he would be entitled if he were not such medical officer.

13.—(1.) The provisions of this Act shall apply to every ship, vessel, boat, tent, van, shed, or similar structure used for human habitation, in like manner as nearly as may be as if it were a building.

(2.) A ship, vessel, or boat, lying in any river, harbour, or other water not within the district of any local authority within the meaning of this Act shall be deemed for the purposes of this Act to be within the district of such local authority as may be fixed by the Local Government Board, and where no local authority has been fixed, then of the local authority of the district which nearest adjoins the place where such ship, vessel, or boat is lying.

(3.) This section shall not apply to any ship, vessel, or boat belonging to any foreign Government.

14. Where this Act is put in force in any district in which there is a local Act for the like purpose as this Act, the enactments of such local Act, so far as they relate to that purpose, shall cease to be in operation.

15. Nothing in this Act shall extend to any building, ship, vessel, boat, tent, van, shed, or similar structure belonging to Her Majesty the Queen, or to any inmate thereof.

18. This Act shall apply to Ireland, with the following modifications:—

(1.) In this Act, unless the context otherwise requires—

The expression "Local Government Board" means the Local Government Board for Ireland:

The expression "local authority" means an urban or rural sanitary authority within the meaning of the Public Health (Ireland) Act, 1878:

The word "district" means urban sanitary district or rural

sanitary district, as the case may be, within the meaning of the said Act:

The expression "clerk of the local authority" includes, in the case of an urban sanitary authority, town clerk and secretary.

(2.) References to a place of abode in England shall be construed to refer to a place of abode in Ireland.

(3.) Offences under this Act may be prosecuted, and fines under this Act may be recovered, in manner directed by the Summary Jurisdiction Acts, before a court of summary jurisdiction constituted in the manner mentioned in the two hundred and forty-ninth section of the Public Health (Ireland) Act, 1878.

DITHIO-SALICYLATE OF SODIUM.

Dr. Liederborn, of Frankfort-on-Maine, recommends the dithio-salicylate of sodium as a better salt than the salicylate for the treatment of rheumatism. The salt, which is soluble in water, occurs in the form of a fine crystalline powder. As a bactericide, it is stronger than the salicylate. Nausea or singing in the ears does not follow its use. The dose is from two to four grains, morning and evening.—*Répertoire de Pharmacie*, 1889, No. 9.

UTERINE CANCER.

Dr. Cheron recommends the following injection in cases of uterine cancer, with a fœtid discharge:—R. Salicylate of sodium, 20 parts; salicylic acid, 1 part; tincture of eucalyptus, 45 parts; distilled vinegar, 300 parts. From one to five tablespoonfuls to be added to a pint of water, and used as a douche several times a day.—*L'Union Médicale*, No. 114.

OMPHALORRHAGIA NEONATORUM SPONTANEA.

Dr. Tross, of Karlsruhe, describes (*Berlin. klin. Wochensch.*) a case of uncontrollable hæmorrhage on separation of the cord of a five days' old baby. A single vessel was found to be the source of bleeding, but all attempts to tie it securely failed. The umbilical tissues were transfixed, but free hæmorrhage took place from the tracks of the needles.

A HAPPY PEOPLE.

At a recent meeting of the French Academy of Sciences, M. Milne-Edwards presented for M. Certes a memoir entitled "The Protozoaires of the Mission of Cape Horn." According to the author, the Fuegians knew nothing of small-pox, measles, scarlet fever, or diphtheria—even pulmonary phthisis was unknown—prior to the inroad of civilised peoples.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

INTRODUCTORY ADDRESS,

Delivered at the Opening of the Session of 1889–1890, *at the Adelaide Hospital, Dublin.* By KENDAL FRANKS, M.D., Univ. Dubl.; F.R.C.S.I.; Surgeon to the Hospital.

GENTLEMEN,

Just seven years ago I had the honour of standing in this theatre as the representative of the Staff of this Hospital to bid our students welcome at the inauguration of a new session, and to wish them Godspeed in the work which they were beginning. Several generations of students have since then passed through the wards of this hospital, and I feel to-day that I have this advantage—that I am addressing an entirely new set of men, not one of whom was then present. I cannot, therefore, be accused of reiteration if, in the course of my address to you to-day, I take as part of my text a well-worn but trusty theme, and tell you again and again that the secret of success in your profession—the great secret of success—is Work. Some of you, gentlemen, have not come here for the first time. We recognise many faces whom we have been accustomed to see during previous sessions in the wards. We have noticed those among you—and we are happy to say they are not few—who, day after day, have watched at the bedside the progress of disease, and who have taken advantage of their opportunities for learning how to watch and how to guide and treat disease in the many forms in which it presents itself. Such earnest workers are most welcome here. Do not think that because each one of you forms but one of a crowd, therefore your efforts must pass unappreciated—perhaps your presence in the wards unnoticed. It is not so. It does not require the acumen of a Sir John Lubbock to distinguish between the working bee and a drone. Amongst medical students the difference is even more readily apparent. And if we soon recognise, by certain signs, the characteristics of our working men, believe me the drones are no less easily recognised and unappreciated. I have occasionally had reason to admire the admirable calmness of a man who has come to claim his certificate for attendance during the session, and who has triumphantly produced the

attendance-book to show that he has attended considerably more than the statutory 80 in the winter session and 40 in the summer, but whose face was almost unknown to me. Of course he was entitled to a certificate, for the attendance-book proved that he was a most regular student, and he had paid his fees; but he would have found, nevertheless, some difficulty in making his way to any region of the hospital except to the room in which the attendance-book was kept. These medical drones—I cannot call them students—often display considerable ingenuity in evading the instruction provided for their benefit, and in learning as little as they can, and they sometimes exhibit considerable talent in assimilating, at the eleventh hour, in a "grinding class," sufficient to satisfy their examiners, and to qualify them to enrol their names on the Medical Register with a respectable proportion of the letters of the alphabet after them. But the Nemesis comes at last. In the insect world we know that there is a time when the working bees rise in revolt and slay all the drones in the hive. In the ever busy hive of life, a less violent but as sure a fate awaits the drones; and the honey, the reward of earnest work, falls to the lot of those who toiled, and but little of it is ever shared by those who have shown a fatal aptitude for idleness. Gentlemen, if you would escape their fate, if you look forward to something better than the dry, unbuttered bread of idleness, you must work, and work at once. To the majority of us success comes only by the sweat of the brain. The man of genius has been described as the man who is endowed with an infinite capacity of taking pains. There are few professions in which there is more scope for genius of this sort than in the profession you have chosen; and there is no profession in which there are more inducements to work than in ours. And if you would work you must have an incentive to work. It is given but to a very few to love work for work's sake. None of you have taken up Medicine as your line in life without some motive. It is well to have a motive, but upon the quality of that motive will depend the quality of your work. The higher your motive is, the more noble your aim, the higher and nobler will be the standard to which you will seek to attain in your work.

In choosing the Profession of Medicine you are entering upon a life of anxious toil. You need not expect the easy pleasures or the roving life of England's warriors, with the occasional opportunity of winning a world-wide reputation, or a Victoria Cross, by a signal act of heroism. They too have in their career periods of active service; they *then* have hardships to endure, obstacles to encounter and surmount, foes to contend with, death to face. But at least they know that their country looks on, sympathises with their sufferings, and triumphs in their victories.

In the medical profession you are always on active service; you are on duty both by day and night; you have to contend against a foe not less

real because unseen, and who never makes a treaty of peace. With your enemy it is war to the knife; victory means life, defeat is death; and in your daily struggle it is not your own life you defend, but the life of another, never knowing, never hesitating to think that your wily enemy may suddenly turn round and grapple you in his deadly embrace.

Gentlemen, there is scarcely a man in our profession, whether he occupy a Presidential Chair in a Royal College, or whether he toils in a remote country district, almost unknown beyond its limits, who has not over and over again, at the risk of his own life, attacked our common enemy in his stronghold, and brought back a comrade from the jaws of death, without a thought of reward or of distinction beyond the record of an approving conscience, which whispers in his ear alone that he has done his duty. But the world ignores such acts of heroism. Other professions are crowned with honours. The Bench and the Woolsack are open to one; the Victoria Cross, titles, and distinctions, may be won by another. All, saving the Medical Profession, may hope to attain Peace with Honour in the House of Lords. But in these countries, at all events, merit in the Medical Profession must indeed wait long before it is deemed worthy of honour. Sir Joseph Lister has perhaps conferred a greater boon on the human race than any other single man of the century, and it is no exaggeration to say that thousands and tens of thousands owe their lives indirectly, but no less certainly, to him; and yet he was highly decorated, and had honours conferred upon him by nearly all the countries of Europe, before England thought that he deserved a baronetcy. And in our own country we have had ample proof of how long it takes to twine the laurels for an Irish physician or surgeon. During the past year we who belong to the Adelaide Hospital have had the same fact brought home to us. One of our men, who had well and faithfully worked in the wards, and had been one of our resident pupils, after he was qualified, took a practice in England. One night he was called upon to attend a woman who was dying of hæmorrhage. When he reached the bedside he found her blanched and pulseless. Without a moment's hesitation he bared his own arm, and without assistance he opened one of the veins and bled himself, and then he injected the blood into the vein in the arm of the apparently dying woman. She recovered, but Marcus Eustace suffered for many a day from the effects of his heroic act. The whole neighbourhood was so stirred by this courageous deed that an influential and numerously-signed memorial was forwarded to the authorities praying that the Albert Medal should be bestowed on him. But the authorities replied that as this praiseworthy deed was done *in the discharge of his professional duties*, the Albert Medal could not be granted to him.

But, gentlemen, mark this:—Official rewards may be refused, but at least the world, and especially those in authority, recognise that a

forgetfulness of self, a courage that verges on rashness, which exposes the life which each man holds dear, for the benefit of another; a courage which requires no roar of cannon or smell of powder to stimulate it, but which finds expression in the dimly-lighted cottage of the poor, where none are present to applaud; that qualities such as these, than which none are nobler in the heart of man, are exercised by medical men as part of *their professional duties.*

Let me give you another instance of this professional courage, and again I draw upon the annals of our Adelaide students. Most of you will remember reading in the newspapers during the past Spring the account of the wreck of the "Cotopaxi." The ill-fated ship, with 200 souls on board, had first come into collision with another vessel, and as her bows were partly stove in, the captain ran her on the beach in the Straits of Magellan in order to ascertain her injuries. He then found that the damage done was not so serious, and though he could not make for Liverpool, he believed, with some caution, he could reach New York. The voyage was begun anew, but, not long afterwards, at night she struck upon a hidden rock, and this time it was apparent that she would sink. The boats were lowered, the most admirable discipline was displayed, and rapidly the boats were filling. But the vessel was sinking fast. Among the passengers were two confined to their berths, and prevented by paralysis from moving. Who was the daring spirit that, forgetful of his own peril, twice descended to the cabin, and bore in his arms the helpless burdens to the deck, whence they were lowered to the boats and saved? Then, and not till then, his duty done, he thought of himself, and left the sinking ship.

You will estimate the cool courage that could not have stopped one moment to think of self, or to hesitate when duty called, when I tell you that the vessel sank eight minutes after she struck that fatal rock; but not one of the 200 was lost. Need I tell you that that man was the doctor on board the ship: some of you knew him well—Charles D'Alton, a former student of this hospital.

It is not surprising that a total stranger, when he read the account, wrote to the papers to express his admiration, and to suggest that a public subscription should be raised to mark the popular verdict on his conduct. Nor is it surprising that the young man's father should have written in his own and his son's name to decline the proffered honour, satisfied as they were that in the hour of trial he had upheld the noble traditions of his profession, and had done his *duty.*

It is not often that such deeds by members of our profession come to light. Self-sacrifices are neither rare nor exceptional. The very exigencies of medical practice daily afford the opportunity, and medical training, which begins the first day we enter hospital as a student and ends only with life itself, teaches us that the very essence of a medical

life that is true to itself is forgetfulness of self and thought for others. We begin to practise this when first we learn to give up some hours of pleasure, or a well-earned night of rest, to sit by the sick bed; and this I will say of you who are listening to me, and of your predecessors, that I have never called upon students in this hospital for such a sacrifice that I have not met with hearty response. This may appear but a small thing, but it is the beginning of a habit which develops by practice, and makes the medical practitioner ready to endure all things, to suffer all things, to dare all things, in the discharge of what he feels to be his duty. Could we but draw aside the veil and study the unrecorded life of some obscure practitioner in a country district, or a city slum—one animated by love of his profession and by a deep sense of his responsibility—we should find a record of daily self-sacrifice, and of many heroic deeds, that would amply justify the world's verdict that these form part of a medical man's "professional duties."

Dr. Clifford Allbutt, in an eloquent address which he recently delivered at Leeds, thus expresses his own experience:—"For personal virtues, for a certain ethical habit, which, in its loftiness, simplicity, and unselfishness, is perhaps incomparable, the general practitioners of medicine offer a noble example to all other men; for they carry their high standard of conduct with a humanity, a moderation, and a modesty, which do not invariably adorn the righteousness of other men."

This estimate of what a member of our profession should be is not a wrong estimate. The world expects that the medical man will not fail in the hour of need, and it is so accustomed to find that he can be relied upon, that any failure on his part is heavily visited. It expects that in sudden emergencies he will be calm; that when others have lost their heads, he at least will be cool and collected; that he not only will know what to do, but will be prepared to do it, whatever the risk to himself may be. When infection is rife, and friends and relatives have deserted the sufferers, the doctor must show no fear. He is then, like the Great Physician whom he serves, a friend to the friendless, and a friend who sticks closer than a brother.

But, gentlemen, more than this is expected of the medical man. In his relations with the sick, he is often made the confidant. The skeleton in the cupboard, so jealously screened from other eyes, is frequently revealed to him. He becomes the depository of secrets upon which the happiness of many depends. He does not court these confidences, but necessity sometimes lays them upon him. But the world trusts him, and however much professional ethics may, in some quarters, be scoffed at, the world respects him for his reticence and relies upon his honour. And this confidence in the integrity of medical men extends to other matters too. The doctor is admitted to the household, and frequently to an intimacy with all its members that no other man enjoys. The honour of

that household becomes his sacred trust, and that trust he should value, that honour he should as jealously guard, as if it belonged to his own family.

Gentlemen, you may perhaps think that I have drawn some of the characteristics of a medical man in too brilliant colours, that I have sketched out an ideal which few have attained to, and which few can hope to reach. I acknowledge that the standard is a high one, but I also say that it is one which we should all strive after, and one which is abundantly illustrated by the annals of medical history. Do not be discouraged because some may seek to attain to eminence by other and less worthy means. Such men stand on a giddy pedestal. The foundation is on the sand. The superstructure has not been cemented with truth and honour, and the fierce storm of trial may some day shake it to its foundation and lay it prone in the dust, revealing to all that what appeared so grand, so successful, so imposing, was, after all, nothing but a hollow sham.

Gentlemen, we should all strive after eminence in our profession, but let it be the eminence of a spotless name, an honourable career, an unselfish life. Raise up the structure of your reputation on an honest purpose. Build it up of honourable deeds and noble actions, cement it with truth, and beneath the foundation bury *self*. "I cannot wonder," says a physician who occupies a leading place in our profession, "that an honourable reticence has less attraction for us, that a calm and patient temper seems too slow for us, and that the bonds of fraternity are weakened when self-seeking, ostentation, and *finesse*, if they do not take men into the first rank of our profession, at any rate make a very good thing for very many of them. The spirits of the faithful have thus been tried, not in our day only, but in all times of luxury and pride. But perhaps in all ages, certainly in our own, I am thankful to say that purity, disinterestedness, and devotion, not only bring peace with them, but even in the world itself surely win that success which a wise man would seek."

If I were to hold up to you one example out of the many which suggest themselves to me as an illustration of what I mean, I would mention the name of one who was suddenly taken from our ranks but a few months ago. Dr. Robert M'Donnell had risen to high eminence in his profession. He was widely known, far beyond the limits of this kingdom, for his professional attainments. He was the only medical man in practice in Ireland who was honoured with a Fellowship of the Royal Society; and he has left behind him a record of scientific and professional ability which alone would be sufficient to keep his memory green amongst us. But it was not for his ability or his attainments alone that we valued him. He had climbed to the highest place among his brethren along the steep and narrow path of integrity. He never stooped to rise. He

availed himself of no means of promotion which would not bear the light of day. All who knew him felt that in him they had a friend they could trust, in darkness as in light—a counsellor whose advice was never tinged with self—an example magnificent in its purity and simplicity, which all might follow. In the world at large, but nowhere so much as among his brethren, the name of Robert M'Donnell is synonymous with all that is purest, noblest, and truest in the character of a man.

Many of you listening to me are about to begin the studies of your profession. The thought with some of you is how best to use the time at your disposal before you present yourselves at the portals of the profession and seek to enter in. A responsibility lies upon you which will train you for sharing the responsibilities of those who have passed the gates. Your responsibilities now are very different from what they will be then. Then the lives of others become your care. Now your duty is to make the most of your opportunities for your own sakes. But your present responsibilities do not end there. If you waste your time now, if you do not lay a good foundation in these your preliminary studies, whether you pass your examinations badly or well, how will you be able to take upon yourselves the responsibilities of other people's lives? I do not purpose to-day to take you over the curriculum. The importance of the various branches—of anatomy, physiology, and the rest—will be impressed upon you elsewhere. Some of you were in this theatre last year, and will remember the wholesome advice given to you in the eloquent address delivered by our Senior Surgeon, Mr. Barton. To the wise counsel you then received I can add nothing, and I will not attempt to mar its completeness by plagiarism. I cannot forget that to-day we stand within the walls of the hospital. Here you will see the more practical side of your studies. Here you will see the goal towards which all your studies tend. Here you will learn what sickness means, and how to deal with it. And here you will learn much more—you will learn sympathy and compassion, the ever-present desire to help, and the best means of rendering it. Here you will learn to read the most interesting volume in your curriculum. "God opens one book to physicians," says Oliver Wendell Holmes in "Elsie Venner," "that a good many of you don't know much about—the book of life. That is none of your dirty folios with black letters between pasteboard and leather, but it is printed in bright red type, and the binding of it is warm and very tender to every touch. They reverence that book as one of the Almighty's revelations. They will insist on reading to you lessons out of it, whether you call them names or not. These will always be lessons of charity."

In the wards of this hospital you will find many such volumes. Study each one well. You will find no two of them alike; some are bound in the choicest skin, others are battered and not always enticing. But each volume teaches its own lesson, and it may be that the most uninte-

resting-looking and battered binding may conceal the most valuable and lasting lessons which you may learn. And, above all, study each one thoroughly. The time spent in your hospital each morning would be far better spent in trying to master all the details of one or two cases than if you succeeded in seeing something of every case in the house. It is not only that you will learn more in this way, and that you will gain knowledge which will stick to you all your life, but you are at the same time cultivating a habit which, in after-life, will be one of your most valued possessions—a habit of *thoroughness.*

Whilst you are studying your profession at the bed-side, remember that these books from which you learn are men and women. They have their feelings and susceptibilities, and they are sick and perhaps in pain. Respect their feelings; let no thoughtless or hasty word wound them; show sympathy in their suffering, and a personal interest in the sufferer. You will thus gain their confidence and respect, and you will soon reap a reward which is worth much—a welcoming smile as you approach the bed, and heartfelt, if sometimes ill-expressed, words of gratitude and goodwill.

Gentlemen, I have already said that it is not given to every man to love work for work's sake. It is difficult, I confess, to become enthusiastic over the Pharmacopœia or the sphenoid bone; yet still these and similar portions of your studies must be mastered, and mastered well, if you wish to advance to more interesting topics. And as you advance and learn to value your hospital work, you will find it more and more engrossing, and interest will develop into enthusiasm, and enthusiasm is the backbone of success. In the wards of the hospital you will find an unending variety of interest, whether your inclination leads you to the medical or to the surgical side. In the medical wards enterprise will be frequently dominated by masterly inactivity, whilst in the surgical wards inactivity will be dominated by enterprise.

If you have studied your text-books either in medicine or surgery before coming to hospital, you will be struck, I am sure, by the rapid advances which have been made of late years in both branches of our profession. It is not my intention to-day, nor in the presence of our physicians would it be within my province, to speak to you of medical progress. Much progress has, indeed, been made, but the progress is like the progress of Stanley in Africa—it serves to show us what vast tracts of dark continent still remain to be explored. The advance of surgical science has, however, been more rapid and decided. So startling has it indeed been, that it tempted Mr. Erichsen a few years ago to declare that we had reached finality, that in fact we had discovered so much that little, if anything, further was left to learn, and that, as far as future progress was concerned, we might rest on our laurels. I need not take up your time to-day in order to refute this proposition. His position

has been so strenuously attacked, and, I may say, destroyed by an address delivered shortly afterwards by Sir Wm. Stokes, and his theory has been so completely upset by the rapid progress made since then, that we can only place this statement of Mr. Erichsen's alongside of a similar opinion expressed by the distinguished French surgeon, Baron Boyer, who about seventy years previously said that surgery had already completely, or almost completely, attained perfection. And yet, since his day the reconstruction of the science and art of surgery has been so complete as to deserve the name of a revolution.

The beginning of this revolution, I think, may safely be attributed to the introduction of antiseptics in surgery. When on a former occasion I had the honour of delivering the introductory address in this theatre, I dwelt at length on the germ theory. At that time antiseptic surgery was on its trial, and in Dublin it had but few adherents. We who believed in it had satisfied ourselves that it rested on a scientific basis so absolutely proved that, though we were then in a small minority, we fought without a misgiving under the banner of Antisepsis with all the enthusiasm of converts, and were not ashamed to own allegiance to the great surgical revolutionist, Sir Joseph Lister. But times are changed, and peace has been declared, and the tomahawk lies buried. Other bones of contention have arisen, but we no longer hunt after un-antiseptic scalps Whence comes this peace? It is due to this—that in every country in the world antiseptic surgery has triumphed. It would now require all the ingenuity of a red Indian to find the trail of an avowed infidel who has escaped the scalping-knife of the true believer. In the army the practice of antiseptic surgery is compulsory, and the authorities may well be proud of the result.

Sir William MacCormac gives some interesting facts. In the Crimean War nearly 96,000 Frenchmen lost their lives, 75,000 of whom were sacrificed to diseases for the most part avoidable. "During the American War 97,000 died from wounds, while just double the number, 184,000, perished from diseases which modern knowledge declares to be preventable." Both these wars occurred in the pre-antiseptic era. Place in contrast with these the campaign in Egypt, in 1882, when "our surgeons were furnished with the best antiseptic appliances, and the material in their hands was turned to such excellent account that not a single man died from pyæmia, septicæmia, erysipelas, or hospital gangrene—a result altogether unparalleled in the annals of war."

In this hospital antiseptic surgery has flourished and has borne much fruit. Blood-poisoning and erysipelas have practically been abolished, and by its means numerous lives have been saved. The death-rate after operations has been reduced to less than $3\frac{1}{2}$ per cent. a point which would have been incredible a generation ago. But a campaign against the insidious and minute germs of disease cannot be carried on without the

sinews of war, and the surgeons of this hospital, upon whom the chief responsibility rests, gratefully acknowledge the liberal-mindedness of the members of the Managing Committee, who, in spite of financial difficulties, have with open hand supplied them with what they needed for the antiseptic treatment of wounds; and with the results before them, apparent in every surgical ward, they may rest assured that the friends and supporters of this institution will commend them for the outlay and will supply the means for carrying on the work.

But the results of antiseptic surgery are not to be judged alone by a diminished death-rate. It has insured the rapid healing of a wound, so that the period of healing, which formerly was counted by weeks and months, is now a matter of days, and the patient's stay in hospital is correspondingly diminished. Pain after an operation is reduced to a minimum or is often absent altogether. The odours of a suppurating and fœtid wound no longer infect the wards. But, beyond all this, it has opened up new fields for surgical enterprise little dreamt of a few years ago. Some, perhaps, may suggest that this is not altogether an unmixed good. Perhaps that is so; but, as experience grows, the dangers of rashness will become tempered by caution, and in the meantime I know I can confidently appeal to the physician to say whether the inroads which surgery has made into regions of the body hitherto regarded as his own peculiar domain have not been productive of more good than evil, and I appeal to him because, at any rate, he cannot be supposed to have a bias in favour of surgery as against medicine.

In the short space of time which remains to me I could not—even in a cursory manner—travel over these new fields of surgical progress, nor is it necessary that I should do so. A great deal of the ground has already been cleared by the address delivered last year on Abdominal Surgery by my colleague, Mr. Heuston. I will satisfy myself by taking a few illustrations out of this vast storehouse. Take, for instance, a case of renal calculus, or stone in the kidney. If you have seen such cases you will never forget the intense suffering which frequently accompanies this complaint, and which we usually term renal colic. But even in the intervals of these paroxysms, or in those more fortunate cases where the acute symptoms are absent, the constant pain in the side, radiating in various directions, renders the sufferer's life almost unendurable. Such cases a few years ago belonged to the domain of the physician. The agonising paroxysms were relieved or kept in abeyance by means of one or other of the various narcotics, and in the intervals of the attacks attempts were made by a regulated dietary, and by certain natural or medicated waters, to dissolve the stone and to prevent the formation of new ones. But within the last few years the surgeon has been called in to assist the physician. He has shown that not only is it feasible to reach the kidney and to extract the stone, but that this can

be done with safety, and that thus by means of surgical intervention years perhaps of recurring agony may be abolished, and the sufferer restored to a life of comfort and ease.

Almost in similar words might I describe to you what benefit has resulted from surgical intervention in another most painful condition which we know by the name of gall-stones. Here, again, by operative means have many lives been saved, and health restored where sickness and pain prevailed.

These two instances I have cited also illustrate an important fact—namely, that surgical science, in thus invading territory which some short time ago was not supposed to belong to it, is in no way hostile to the sister-science of medicine. It does not work in opposition to it—it merely supplements it. The physician, anxious above all things for the welfare of the patient, recognises that sometimes in such cases a point is reached when medical science is unavailing, or he realises that a shorter and sharper remedy may accomplish more rapidly and effectually that end which medicine might struggle long and hard to reach. He then avails himself of his ally, calls upon him for assistance, and rejoices with him in his success.

Perhaps the most brilliant illustration of the progress of surgery is to be found in certain affections of the brain. The discovery that the various movements of the body were presided over and governed by certain localised areas on the surface of the brain, gave the first impetus towards clearing away the chaos of confusion which existed regarding this most important organ. An accurate knowledge of these areas of the brain, and a careful study of the portions of the body affected either by spasm or paralysis, enable the physician in cases of tumours or other lesions of the surface of the brain to localise the situation of the disease or injury; and to the uninitiated it seems almost miraculous to observe the skill and knowledge the physician displays as he places his finger on some particular portion of the skull and unhesitatingly declares that beneath the bone in that particular situation a tumour will be found. A short time ago such a diagnosis was a safe one to make, for as long as the patient lived there were no means of establishing either the correctness or the incorrectness of the diagnosis which had been made. But now all this is changed. It has been shown, notably by Victor Horsley, that, under the protection of strict antiseptic precautions, certain portions of the brain can be successfully dealt with by the surgeon. Therefore, when certain symptoms indicate that there is pressure on the brain, and when by a most careful and thorough observation of certain "localising symptoms" to which I have already referred, the physician is enabled to indicate the exact position beneath the skull where that pressure exists, the aid of the surgeon is again sought, and frequently with success. The progress of surgical science has thus placed in the list of curable

diseases a class of cases which but a few years ago were invariably regarded as hopeless.

Gentlemen, the instances I have given of surgical progress are drawn from what I may call the higher flights of surgery. These undoubtedly attract our imagination by their very brilliancy, but they do not mark the only progress that has been made. Along the whole line day by day we advance. The treatment of ulcers and wounds, of sprains and fractures, is different now, and is better now than it was formerly. I will only ask your attention for a few moments to what I consider will ere long be regarded as one of the most potent agencies in the treatment of certain of these more common and sometimes more trivial affections, such as sprains and fractures, cases which none of you will wait long before you have to deal with yourselves. The method I allude to is one which owes its introduction into surgical practice chiefly to Mezger of Amsterdam, and von Mosengeil. It has been tried by such men as Billroth and Esmarch, and has received their unqualified approval, and yet, in these countries, massage is too frequently described as a fad of the day. Believe me, gentlemen, if surgeons would but thoroughly study it for themselves, and try it in many of those obscure joint affections, we should hear less of the marvellous cures of bone-setters in cases where surgeons have signally failed.

I am not now referring to the use of massage as employed in the more distinctly medical cases, although in this hospital many of you saw during the past year a truly remarkable instance of its efficacy. A young gentleman, under the care of one of my colleagues, was treated for many months by massage for paralysis of the legs from the knees downwards. The paralysis was complete. He was well known in Dublin by sight, as he wended his way along the streets on his knees, with small wheels fastened on to the toes of his boots to enable him to drag his perfectly useless limbs after him. He had been a sufferer thus for over sixteen years. We watched the progress he made under Massage with the keenest interest, as after months of toil he was first able to stand with assistance. Then, after a time, he was able to walk with the help of sticks. A few months ago he came to see me, and told me he had been waltzing at a ball down in the country.

To-day, however, I wish shortly to allude to the use of Massage in surgical cases, and I will take as my text a sprained ankle. This is an affection with which we are all more or less familiar, many of us from personal experience. It has been said, and said truly, that a sprained ankle is frequently worse than a broken bone. Most of you know the ordinary rules of treatment—the cold douche and the hot douche, the evaporating lotions and bandaging. But there is one element of the treatment which is common to all—namely, rest. Rest in these cases is absolutely necessary—first, because the swelling and the pain are so intense, and the

inflammation is so acute, that the patient cannot do otherwise than rest the limb, and, secondly, because we know that in order to get union between the ends of the torn ligaments, immobility of the parts is essential. Under these ordinary methods of treatment the patient is usually confined to bed for three weeks, and not infrequently for six; and even then it is not uncommon to find some stiffness of the joint remaining, or some movements of the ankle which are distinctly painful. These are attributed to the formation of what we call adhesions, or fibrous bands round the joint, and these are, again, the immediate result of the enforced rest. Thus we see that rest, which is so necessary for cure, is at the same time productive of evil.

I need scarcely describe to you the appearance of a sprained ankle. The discoloration of the skin, the great swelling, the exquisite tenderness, the burning heat, are photographed on your minds. The discoloration of the skin you know is due to extravasated blood, the tenderness results from the tearing of the tissues, the heat is evidence of the acuteness of the inflammation, the swelling is the outward and visible sign of the effusion of serum from the blood and the extravasation of lymph. During the process of repair we trust to absorption of these fluids taking place. Some of these fluids are reabsorbed by the blood-vessels, but this is materially interfered with by the impeded circulation at the injured part. We therefore must depend more upon the lymphatic vessels, which you know play the chief part in absorption. Here again we meet with difficulty; for one of the most potent agents in causing circulation in the lymphatics is muscular contraction, which squeezes the fluids along these well-valved vessels. But in such a case as we are considering the muscles share in the enforced rest. We, therefore, have mainly to depend on gravity by elevation of the limb. Now you will see what an important part massage plays in the treatment. By its means we can secure all the advantages of absolute rest without any of its consequent evils. I have heard massage described as a rough treatment, but this only shows an utter want of appreciation of the gentle manipulations of an experienced hand. The most exquisitely tender joint can be massaged by one who knows his business without eliciting a sign of pain from the patient. When properly done, say for fifteen or twenty minutes at a time, it is surprising to see how rapidly the swelling subsides. The rubbing is performed upwards, that is, in the direction of the lymphatics, and thus the fluid is gradually and gently forced along these vessels, so that the injured joint in two or three days has resumed its normal shape.

This is not a theoretical assumption—it has been proved to be the case by direct experiment. Von Mosengeil, for instance, injected into both knee-joints of a number of rabbits a syringeful of Indian-ink. "Massage was performed at intervals on the right knee, but the left was

untouched. At the expiration of twenty-four hours or more the animals were killed." The left knee-joints were found distended with the fluid, whilst on the right side, which had been manipulated, it had entirely disappeared. The lymphatic glands on the right were full of particles of Indian-ink, whilst the corresponding glands on the untreated side remained unaltered.

But massage effects more than this. It stimulates the circulation in the part to a remarkable degree. It thus assists in absorption by the blood-vessels, and so helps in getting rid of those materials round the joint which would form adhesion if left unabsorbed. But this very stimulation of the circulation in this part effects another end. It hastens to an important degree the process of repair, and thus the accumulated experiences of many surgeons who have tried this method of treatment show that a sprained ankle, if treated at once, can be cured in from six to nine days, instead of as many weeks, and the result is a more perfect use of the joint and limb than when other means are employed.

In the treatment of fractures, and especially those in the neighbourhood of joints, massage has been equally successful. We have seen in the wards of this hospital a boy walking about the ward without crutches or sticks, who had fractured both bones of one of his legs three weeks previously. I cannot do more to-day than thus shortly refer to surgical massage, but I trust you will see that we do not resort to it like a quack medicine, trusting to empiricism alone. It rests, I believe, on a scientific basis, and with this foundation it is certain to prosper when employed in suitable cases.

Gentlemen, I thank you for the patient hearing you have given me. It is no light task to deliver an Inaugural Address. If, in the words I have spoken here, I have induced you to look upon your profession as one which progresses in knowledge, and which applies that knowledge to the relief of your suffering brothers—if I have kindled in your hearts a spark of enthusiasm to excel in all that is most noble, most unselfish in the life of man, to imitate the example of the Great Physician Who went about doing good and healing the sick, and Who at last sacrificed His life for others, my efforts will not have been in vain.

BELGIAN STATISTICS.

Since 1872, taking into account the increased population of Belgium, insanity has increased 45 per cent.; crime, 74 per cent.; suicides, 80 per cent.; mendicity and vagabondage, 150 per cent. It may help to explain this increase to know that during last year 70,000,000 litres of gin were consumed in the country.

CLINICAL RECORDS.

Splenic Enlargment in Leucocythæmia.[a] By Edgar Du Cane, B.A., R.U.I.

D. F., aged twenty-eight, single, coal-porter, was admitted to the Whitworth Hospital on December 6th, 1886, under the care of Dr. Nugent. He has never had syphilis or other venereal troubles, but fourteen years ago suffered from an attack of typhoid fever. He has never been out of Ireland, and indulges moderately in alcohol and tobacco. His father died when patient was a child, and he does not know the cause of his death. His mother died from bronchitis, and one sister from typhus. Eighteen months ago he suffered from vomiting, dyspnœa, weakness in the legs, and pain in the left side, which was, however, neither constant nor severe. He next noticed a tumour below the chest on the left side, which gradually increased, passing forward to the middle and lower part of the belly (the umbilical and hypogastric regions). The abdomen began to swell and increase in size, *pari passu* with the tumour, but he has wasted away otherwise. He has had neither diarrhœa, nor epistaxis, nor any hæmorrhage from the bowels or urinary passages.

Present condition (Dec. 6th, 1886).—He is emaciated and slightly jaundiced; eyelids not swollen; heart and pulse normal; no cyanosis; slight bronchial catarrh and dyspnœa; appetite good; bowels regular. Urine sufficient in quantity, but slightly albuminous; otherwise chemical and microscopical examination revealed nothing abnormal. Lymphatic glands in axilla somewhat enlarged; temperature normal; no pain or œdema; vomiting has not occurred since admission. The superficial abdominal veins are slightly enlarged; abdomen distended, tympanitic on right side, but dull on the left side. A hard smooth tumour occupies the left hypochondriac, left lumbar, left iliac, epigastric and hypogastric regions, presenting a sharp anterior edge to the right, notched in two places—viz., just above the umbilicus, and about two inches below and to the right side. The posterior margin is ill-defined and lost towards the left flank. There is no pain or tenderness on pressure, and no murmur can be heard on auscultation.

On examining the eyes with the ophthalmoscope, the retina exhibited a pale orange colour, and not the usual red tint. There was no exudation along the course of the retinal vessels, nor were they dilated or knotted.

Microscopic examination of the blood revealed an enormous increase of white blood-corpuscles. They were not scattered amongst the red, but

[a] Read before the Carmichael College Medical Science Association.

lay in irregular lumps. Dr. J. A. Scott, of the Carmichael College, confirmed my observations, which showed that the normal ratio of 350 red to 1 white had been altered to 4 red to 1 white. Between the buffy coat and the clot, single clots of white corpuscles formed; when freed from fibrin by beating, the red corpuscles sank, while the lighter white corpuscles formed a whitish purulent-looking or milky layer on the upper part.

The diagnosis was made of leucocythæmia. This disease was first described by Hughes Bennett, of Edinburgh, and six weeks after by Virchow, who called it leukæmia. The principal signs are—(1) the waxy appearance (splenic cachexia), which often attains a high grade; (2) the physical signs of enlarged spleen, unaccompanied usually with pain or pyrexia; (3) vomiting, diarrhœa, and hæmorrhages, such as epistaxis, bleeding from the gums, subcutaneous petechiæ; (4) peculiar changes in the blood.

The cellular elements of the spleen are greatly increased. The white corpuscles become more and more numerous, both relatively and absolutely, so that they may even equal or exceed the red in number.

The specific gravity of the blood is lessened, being 1036–1040 instead of 1055. The proportion of water is increased, while, in spite of the increase of white corpuscles, the proportion of solids is decreased as a result of the diminution of red corpuscles. This, together with the low specific gravity of the white corpuscles, explains the lower specific gravity of the blood as a whole.

Scherer also found in leukæmic blood certain constituents of the splenic fluid—such as hypoxanthin, lactic, formic, and acetic acids, and a body whose reaction corresponded to glutin.

Uric acid and leucin, usually found in splenic fluid, are, however, not present in leukæmic blood. The urine generally contains urates, or even uric acid, from the higher oxidation of the hypoxanthin of the blood. Liebreich first drew attention to the frequent occurrence of retinal hæmorrhages in this disease. The weight of the spleen has reached 5, 7, 9, and even 14 lbs. Iron, iodine, quinine, and arsenic have been recommended, but are of little service.

The disease has always a fatal termination. The patient remained some time in hospital, and then returned home; he returned again in Nov., 1887, and there died. The relatives refused to allow any *post-mortem* examination.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, October 5, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.		Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.
Armagh -	15·5	15·5	15·5	20·7	Limerick -	14·8	18·9	14·8	21·6
Belfast -	21·8	22·3	29·5	22·0	Lisburn -	19·3	14·5	0·0	29·0
Cork -	10·4	25·3	21·4	16·9	Londonderry	17·8	23·2	25·0	41·0
Drogheda	25·4	16·9	16·9	0·0	Lurgan -	20·5	20·5	15·4	20·5
Dublin -	23·9	28·4	30·7	25·5	Newry -	45·7	24·6	14·0	14·0
Dundalk -	8·7	8·7	8·7	4·4	Sligo -	9·6	14·4	24·1	14·4
Galway -	13·4	13·4	26·9	16·8	Waterford -	32·4	18·5	23·2	18·5
Kilkenny	21·1	21·1	4·2	12·7	Wexford -	4·3	8·6	21·4	12·8

In the week ending Saturday, September 14, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 14·7), was equal to an average annual death-rate of 16·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·1 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 15·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·7 per 1,000, the rates varying from 0·0 in seven of the districts to 10·3 in Lurgan. The 4 deaths from all causes registered in the last-named district comprise 1 from scarlatina and 1 from diarrhœa. Among the 96 deaths registered in Belfast are 4 from typhus, 4 from whooping-cough, 5 from simple continued and ill-defined

fever, 6 from enteric fever, and 11 from diarrhœa. Two of the 6 deaths registered in Drogheda were caused by whooping-cough. Among the 13 deaths registered in Newry are 1 from whooping-cough and 1 from enteric fever; and the 5 deaths in Kilkenny comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 200—108 boys and 92 girls; and the deaths to 166—82 males and 84 females.

The deaths, which are 18 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 24·5 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first thirty-seven weeks of the current year the death-rate averaged 25·2, and was 4·1 under the mean rate in the corresponding period of the ten years 1879–88.

Twenty-four deaths from zymotic diseases were registered, being 2 over the number for the preceding week, but 18 under the average for the thirty-seventh week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 4 from enteric fever, 12 (including 9 deaths of children under 5 years of age) from diarrhœa, 3 from dysentery, &c.

Eighteen cases of enteric fever were admitted to hospital, being 4 in excess of the admissions for the preceding week, but 4 under the number for the week ended August 31. Four enteric fever patients were discharged, 1 died, and 67 remained under treatment on Saturday, being 13 over the number in hospital at the close of the preceding week.

Only 1 case of scarlatina and 1 of typhus were admitted; 7 cases of the former and 9 of the latter disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 23, being equal to the average for the corresponding week of the last ten years, but 2 under the number for the week ended September 7. The 23 deaths from these causes comprise 11 from bronchitis, 7 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, September 21, the mortality in twenty-eight large English towns, including London (in which the rate was 15·2), was equal to an average annual death-rate of 17·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·4 per 1,000. In Glasgow the rate was 17·2, and in Edinburgh it was 17·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 23·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts

were equal to an annual rate of 4·1 per 1,000, the rates varying from 0·0 in seven of the districts to 7·0 in Newry—the 7 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from diarrhœa. Among the 98 deaths from all causes registered in Belfast are—1 from typhus, 3 from whooping-cough, 2 from diphtheria, 3 from simple continued and ill-defined fever, 6 from enteric fever, and 13 from diarrhœa. One of the 4 deaths registered in Lurgan was caused by typhus.

In the Dublin Registration District the births registered during the week amounted to 168—88 boys and 80 girls; and the deaths to 193—98 males and 95 females.

The deaths, which are 21 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 28·5 in every 1,000 of the estimated population. Omitting the death of a person admitted into a public institution from a locality outside the district, the rate was 28·4 per 1,000. During the first thirty-eight weeks of the current year the death-rate averaged 25·2, and was 4·0 under the mean rate in the corresponding period of the ten years 1879-88.

Thirty-eight deaths from zymotic diseases were registered, being 3 in excess of the average for the corresponding week of the last ten years, and 14 over the number for the week ended September 14. They comprise 1 from scarlet fever (scarlatina), 3 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 7 from enteric fever, 14 (including 12 deaths of children under 5 years of age) from diarrhœa, 4 from dysentery, &c.

The number of cases of enteric fever admitted to hospital is 15, being a decline of 3 as compared with the admissions for the preceding week. Ten enteric fever patients were discharged, 4 died, and 68 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, September 14.

Two cases of scarlatina and 5 cases of typhus were admitted against 1 case of each of those diseases admitted during the preceding week; 6 cases of scarlatina and 10 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 20, being 3 under the number for the preceding week, and also 3 below the average for the thirty-eighth week of the last ten years. The 20 deaths comprise 14 from bronchitis, 1 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, September 28, the mortality in twenty-eight large English towns, including London (in which the rate was 16·4), was equal to an average annual death-rate of 17·9 per 1,000 persons living. The average rate for eight principal towns of Scotland

was 18·8 per 1,000. In Glasgow the rate was 20·7, and in Edinburgh it was 16·6.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·3 per 1,000, the rates varying from 0·0 in nine of the districts to 7·9 in Belfast—the 130 deaths from all causes registered in that district comprising 3 from scarlatina, 5 from whooping-cough, 2 from diphtheria, 2 from simple continued and ill-defined fever, 7 from enteric fever, and 16 from diarrhœa. The 4 deaths from all causes registered in Newry comprise 1 from whooping-cough and 1 from diarrhœa; and the 3 deaths in Armagh comprise 1 from diphtheria.

In the Dublin Registration District the births registered during the week amounted to 178—85 boys and 93 girls; and the deaths to 213—101 males and 112 females.

The deaths, which are 45 above the average for the corresponding week of the last ten years, represent an annual rate of mortality of 31·5 in every 1,000 of the estimated population Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 30·7 per 1,000. During the first thirty-nine weeks of the current year the death-rate averaged 25·4, and was 3·7 under the mean rate in the corresponding period of the ten years 1879–88.

Thirty-three deaths from zymotic diseases were registered, being 5 under the number for the preceding week, but equal to the average for the thirty-ninth week of the last ten years. The 33 deaths for this week comprise 1 from measles, 6 from enteric fever, 21 (including 17 deaths of children under 5 years of age) from diarrhœa, 2 from dysentery, &c.

Twenty-six cases of enteric fever were admitted to hospital, being 11 over the number of admissions for the preceding week. Sixteen enteric fever patients were discharged, 2 died, and 76 remained under treatment on Saturday, being 8 over the number in hospital on Saturday, September 21.

Four cases of scarlatina and 3 of typhus were admitted to hospital against 2 cases of the former and 5 of the latter disease admitted during the preceding week. Ten cases of scarlatina and 11 of typhus remained under treatment in hospital on Saturday.

Twenty-nine deaths from diseases of the respiratory system were registered, being 7 in excess of the average for the corresponding week of the last ten years, and 9 over the number for the week ended September 21. They comprise 18 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, October 5, the mortality in twenty-eight large English towns, including London (in which the rate was 16·6), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·6 per 1,000. In Glasgow the rate was 20·4, and in Edinburgh it was 17·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in eight of the districts to 9·6 in Sligo—the 3 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from whooping-cough. Among the 97 deaths from all causes registered in Belfast are 2 from scarlatina, 2 from diphtheria, 1 from simple continued fever, 5 from enteric fever, and 19 from diarrhœa. The 16 deaths in Limerick comprise 4 from scarlatina; and the 23 deaths in Londonderry comprise 1 each from scarlatina, whooping-cough, and diphtheria.

In the Dublin Registration District the births registered during the week amounted to 219—95 boys and 124 girls; and the deaths to 177—81 males and 96 females.

The deaths, which are 19 above the average for the corresponding week of the last ten years, represent an annual rate of mortality of 26·1 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 25·5 per 1,000. During the first forty weeks of the current year the death-rate averaged 25·4, and was 3·5 under the mean rate in the corresponding period of the ten years 1879–88.

The number of deaths from zymotic diseases registered is 28, being equal to the average for the corresponding week of the last ten years, but 5 under the number for the week ended September 28. The 28 deaths comprise 1 from measles, 3 from whooping-cough, 7 from enteric fever, 10 from diarrhœa, 2 from dysentery, 1 from erysipelas, &c.

Twenty-eight cases of enteric fever were admitted to hospital, being 2 in excess of the admissions for the preceding week. Fifteen enteric fever patients were discharged, 1 died, and 88 remained under treatment on Saturday, being 12 over the number in hospital on that day week.

No cases of scarlatina and only 2 cases of typhus were admitted. The admissions for the preceding week comprised 4 cases of the former and 3 of the latter disease. Eight cases of scarlatina and 12 of typhus remained under treatment in hospital at the close of the week.

Five cases of measles were admitted against 1 for the preceding week. There were only 6 cases of this disease in hospital on Saturday.

Twenty-eight deaths from diseases of the respiratory system were registered, being 4 over the average for the corresponding week of the

last ten years, but 1 under the number for the week ended September 28. They comprise 18 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 2 from croup.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of September, 1889.

Mean Height of Barometer, - - -	30·064 inches.
Maximal Height of Barometer (on 15th, at 9 a.m.),	30·455 „
Minimal Height of Barometer (on 23rd, at 9 p.m.),	29·504 „
Mean Dry-bulb Temperature, - - -	55·1°.
Mean Wet-bulb Temperature, - - -	53·1°.
Mean Dew-point Temperature, - - -	51·3°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·384 inch.
Mean Humidity, - - - - -	87·5 per cent.
Highest Temperature in Shade (on 11th), - -	69·7°.
Lowest Temperature in Shade (on 25th), - -	38·9°.
Lowest Temperature on Grass (Radiation) (on 25th),	32·3°
Mean Amount of Cloud, - - - -	61·5 per cent.
Rainfall (on 13 days), - - - -	1·043 inches.
Greatest Daily Rainfall (on 19th), - - -	·350 inch .
General Directions of Wind, - - -	N.W., N., W.,

Remarks.

As in 1888, so in 1889, September proved a fine month, with a high mean barometer, winds from polar quarters—chiefly N.W., a moderate rainfall, and normal temperature. At the beginning of the month fogs were prevalent along the sea coast, and towards the close strong and squally winds were experienced on several days.

In Dublin the mean temperature (55·8°) was exactly equal to the average (55·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 55·1°. In the twenty-four years ending with 1888, September was coldest in 1866 and in 1882 (M. T. = 53·0°), and warmest in 1865 (M. T. = 61·4°). In 1880, the M. T. was as high as 58·6°; in the year 1879 (the "cold year"), it was 54·3°; in 1887, it was 54·0°; and in 1888, it was 54·4°.

The mean height of the barometer was 30·064 inches, or 0·147 inch above the average value for September—namely, 29·917 inches. The mercury rose to 30·455 inches at 9 a.m. of the 15th, and fell to 29·504 inches at 9 p.m. of the 23rd. The observed range of atmospherical pressure was, therefore, ·951 of an inch—that is, a little less than one inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 55·1°, or 2·5° below the value for August, 1889; that calculated by Kaemtz's formula—viz.,

min. + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 54·8°, or 0·3° below the average mean temperature for September, calculated in the same way, in the twenty years, 1865–84, inclusive (55·1°). The arithmetical mean of the maximal and minimal readings was 55·8°, compared with a twenty-three years' average of 55·8°. On the 11th the thermometer in the screen rose to 69·7°—wind, W.S.W.; on the 25th the temperature fell to 38·9°—wind, N.W. The minimum on the grass was 32·3° on the latter date. The rainfall was only 1·043 inches, distributed over 13 days—both rainfall and rainy days were much below the average. The average rainfall for September in the twenty-three years, 1865–87, inclusive, was 2·288 inches, and the average number of rainy days was 15·0. In 1871 the rainfall in September was very large—4·048 inches on, however, only 13 days. On the other hand, in 1865, only ·056 inch was measured on but three days.

High winds were noted on 8 days, but attained the force of a gale on only one occasion, the 18th. The atmosphere was foggy on the 1st, 2nd, 4th, 5th, 6th, and 16th. Heavy dews and wet fogs were experienced at night about the beginning of the month.

Quiet, but chiefly dull or foggy,weather prevailed during the week ended Saturday, the 7th. At the beginning and close the distribution of atmospherical pressure in Western Europe was anticyclonic, with resulting light variable winds or calm. In the interval between Monday and Thursday, however, a number of shallow, complex depressions passed slowly eastwards across the United Kingdom, causing close thundery weather, with much fog and gloom, and a damp air. Dublin escaped all electrical disturbances, but in the S.W. of Ireland and over the greater part of England thunderstorms were felt—the rainfall accompanying them not being specially heavy, except at a few stations such as Cambridge, where ·66 inch of rain was measured on Tuesday morning. Near Dublin dense vapour fogs hung about the coast from Wednesday to Saturday—this latter day proving brilliant in the extreme. In Dublin the mean height of the barometer was 30·164 inches, pressure ranging from 29·930 inches at 9 P.M. of Monday (wind S.E.) to 30·306 inches at 9 A.M. of Friday (wind S.E. by E.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58·0°, while the arithmetical mean of the daily maxima and minima was 58·9°. Temperature in the shade was highest on Wednesday (65·6°), and lowest on Sunday (48·5°). Rain fell in measurable quantity on Monday to the amount of ·020 inch.

There was but little change in the weather of the second week, 8th to 14th, inclusive. For the most part fine bright days prevailed, with light to moderate S.W. to northerly breezes. On Wednesday it was beautifully fine and summerlike. Temperature rose to 69·7°, and is reported to have risen to 75° at some of the Irish stations. On Saturday the barometer rose slowly with clouded sky, and northerly to north

easterly wind; some slight drizzling rain fell, but although the cloud canopy held persistently during the day the afternoon was fine. In Dublin the mean height of the barometer was 30·163 inches, pressure ranging from 29·964 inches at 9 p.m. of Sunday (wind S.W.) to 30·430 inches at 9 a.m. of Saturday (wind N.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 60·4°. The arithmetical mean of the daily highest and lowest temperatures in the shade was 60·8°. On Wednesday the thermometer in the screen rose to 69·7°. On Monday the lowest reading for the week occurred, and was 53·3°. Rain was measured on four days, the total amount being, however, only ·139 inch, of which ·108 inch was entered to Sunday, the 8th.

There was a marked contrast in the weather of the third week (15th to 21st, inclusive) to that of the preceding one. Monday, the 16th, was cloudy, but fine. Tuesday was bright and fine, but much cirrus cloud was visible, foretelling the approach of a large depression, which subsequently arrived. Towards evening on Wednesday, the 18th, the barometer fell quickly, the sky clouded over and the wind, veering to north, freshened to a moderate gale. Heavy rain fell during the night and part of Thursday. For the rest of the week the weather remained broken, being for the most part cloudy and cold; heavy showers at intervals; wind varying from N.W. to N.E., and squally. Temperature fell considerably, and continued low. Slight ground frost was experienced in some parts of England at night. In Dublin the mean height of the barometer during the week was 30·011 inches, pressure decreasing from 30·455 inches, on Sunday at 9 a.m. (wind E.), to 29·646 inches on Saturday at 9 p.m. (wind N.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 52·4°, the mean of the daily maxima and minima being 53·7°. The shade temperature rose to 62·3° on Wednesday and fell to 40·2° on Saturday. The rainfall amounted to ·413 inch, on four days. The largest daily rainfall was ·328 inch on Wednesday.

The weather of the period from Sunday, the 22nd, to Saturday, the 28th, inclusive, was in all respects changeable, and temperature in particular was unsteady. At the beginning the weather was clear and cold, with light northerly winds. On Monday a depression appeared off the S.W. of Ireland, whence it travelled across the S. of England to the North Sea and Denmark. It caused a considerable rainfall in Dublin (·350 inch), where the wind shifted to the northward in its wake. Over the S. and E. of England, however, the downpour was much greater—1·9 inches being registered at Cambridge in the 48 hours ending 8 a.m. of Wednesday. Another brief spell of clear, cold, weather was followed on Thursday by freshening westerly (S.W. to N.W.) winds, a sudden and marked rise of temperature, and clouds and rain in Ireland and Scotland. On this occasion the precipitation was greatest in the N.W. and N. of Ireland—1·0 inch of rain being registered at Malin Head at 8 a.m. of

Friday. Towards evening of this day the wind veered to N.W., temperature gave way, and the weather improved. In Dublin the mean height of the barometer was 29·936 inches—the extremes being—highest, 30·155 inches at 9 p.m. of Wednesday (wind, W.N.W.); lowest, 29·504 inches at 9 p.m. of Monday (wind, E.S.E.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 50·6°. The mean of the daily maxima and minima was 50·9°. The shade thermometers rose to 62·6° on Thursday, having fallen to 38·9 on Wednesday, when the grass minimum was 32·3°. Rain fell on four days to the amount of ·471 inch, the maximal fall in 24 hours being ·350 inch on Monday.

The last two days of the month were dry and bracing, with strong northerly winds, and alternate cloud and sunshine.

The rainfall in Dublin during the nine months ending September 30th has amounted to 19·936 inches on 147 days, compared with 10·968 inches on 112 days during the same period in 1887, 17·992 inches on 131 days in 1888, and a twenty-three years' average of 19·803 inches, on 143·1 days.

At Greystones, Co. Wicklow, the rainfall in September, 1889, was 1·030 inches, distributed over only 7 days. Of this quantity, ·760 inch fell on the 23rd. Since January 1, 21·120 inches of rain have fallen at Greystones, on, however, only 90 days.

PERISCOPE.

NON-TUBERCULAR AND NON-CARDIAC HÆMOPTYSES OF ELDERLY PERSONS.

In a characteristic and instructive paper, read before the Medical Society of London, Sir Andrew Clark, Bart., President of the Royal College of Physicians of London, says that many years ago, when examining the evidences of the arrestment of phthisis, and endeavouring to determine the conditions in which it occurred, he was struck with the large number of cases of hæmoptysis occurring in elderly persons who were at the time, and remained afterwards, free from signs either of pulmonary tuberculosis or of structural disease of the heart. Sir Andrew concludes his paper with a statement of the propositions which he has framed out of the results of his own inquiries on the subject. These propositions are as follows:—"1. That there occurs in elderly persons free from ordinary diseases of the heart and lungs a form of hæmoptysis arising out of minute structural alterations in the terminal blood-vessels of the lung. 2. That these vascular alterations occur in persons of the arthritic diathesis, resemble the vascular alterations found in osteo-arthritic articulations, and are themselves of an arthritic nature. 3. That although sometimes leading to a fatal issue, this variety of hæmoptysis usually subsides

without the supervention of any coarse anatomical lesion of the heart or of the lungs. 4. That when present this variety of hæmorrhage is aggravated or maintained by the frequent administration of large doses of strong astringents, by the application of icebags to the chest, and by an unrestricted indulgence in liquids to allay the thirst which the astringents create. 5. That the treatment which appears at present to be the most successful in this variety of hæmoptysis consists in diet and quiet, in the restricted use of liquids, and the stilling of cough; in calomel and salines; in the use of alkalies with iodide of potassium; and in frequently renewed counter-irritation."

SACCHARIN.

Dr. Constantin Paul, at the July meeting of the Academy of Medicine of France, recommended the addition of saccharin as an antiseptic to tooth-powder.—*Répertoire de Pharmacie*, September 10th, 1889.

INCUBATION PERIOD OF MEASLES.

Dr. Leroux (*Le Courier Médical*) states that in three cases of measles that occurred in his practice the duration of the incubative stage was nineteen days.

POISONING BY POTATOES.

Dr. Cortail (*Archives de Médecine Militaire*) reports that new potatoes produced, in 101 men of his battalion, headache, dilatation of the pupil, colic, diarrhœa, sweating, feverishness, epigastric pain, vertigo, and sick stomach.

ANTIPYRIN.

La France Médicale, No. 114, recommends coffee, with the addition of sugar aud milk, as the most suitable vehicle for antipyrin.

PERCENTAGE OF INSANE.

At a meeting of the California State Medical Society, held in San Francisco in April last, Dr. Stockton (*Sacramento Medical Times*, No. 5) gives the following statistics of the percentage of the insane to the general population:—California, 1 in 400; New York, 1 in 352; Massachusetts, 1 in 362; Illinois, 1 in 345; Great Britain, 1 in 348.

UNUSUAL DISLOCATION.

Dr. Barnes (*British Medical Journal*, October 5, 1889) reports a case of dislocation of the foot, with fracture of the lower extremity of the fibula. The foot was "turned completely round . . . the whole foot pointed in directly the opposite direction to that it should have done."

APPLICATION FOR THRUSH AND SORDES.

Dr. Ord (*Lancet*, Oct. 19th, 1889) recommends the application of equal parts of glycerine and black wash as a remedy for thrush in children, and for sordes occurring in typhoid fever in adults.

IODIDE OF POTASSIUM.

M. Germain Sée considers that in iodide of potassium we have a true cardiac tonic, and that no beneficial effects are produced on the heart's action by the iodide of sodium.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The "Thermo-Safeguard" Feeding Bottle.

The enterprising firm of Messrs. Burroughs, Wellcome, & Co., have taken over from Messrs. Pocock, Keevil, & Co., their interest in the so-called "Patent Thermo-Safeguard Feeding Bottle," and are selling this most useful and complete addition to the nursery *Armamentarium* at the moderate price of two shillings and sixpence.

This feeding-bottle differs from all others in the fact that a thermometer, embedded in the glass, and graduated according to Fahrenheit's scale, instantly registers the temperature of the infant's food. An arrow is engraved on the scale at 98·5°, indicating the proper temperature at which the food should be given.

In addition to the thermometer the bottle possesses the advantage of being graduated in ounces, so that the precise amount of food administered can be known, thus tending to avert the evil of overfeeding.

Each feeding-bottle is accompanied by two mouth-pieces—one attached to a long flexible Indiarubber tube, the other to a glass screw-nozzle; and by two brushes—one fine, for cleaning the tube and nozzle, the other coarse, for cleaning the bottle itself. Nothing, therefore, has been overlooked in the construction of what may be described as one of the safest and most perfect feeding-bottles in existence.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

DECEMBER 2, 1889.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVIII.—*On Morphinism.*[a] By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Professor of Medicine, Royal College of Surgeons; Fellow, King and Queen's College of Physicians.

THE opium habit is at present, in civilised countries, indulged in almost exclusively through the instrumentality of the hypodermic syringe.

Opium *smoking*, which has long been a national characteristic of the Chinese, has found a limited number of imitators among the lower strata of society in places where Chinamen have introduced the practice.

Opium *eating* is said by competent observers to be very much on the increase in the manufacturing districts of England, and in the counties of Lincoln, Cambridge, and Norfolk.

Early in the present century, though there were occasionally cases of people who used opium to excess in the solid form or in solution, the use of morphin by the subcutaneous method was absolutely unknown. It was reserved for quite modern times—since about the year 1859—to see the subcutaneous method employed as the principal, and almost the sole, channel for the vicious introduction of morphin into the system, while the terms morphinomania (first employed by Charcot) and morphinism (first

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, November 15, 1889. [For the discussion on this paper see page 531.]

employed by Levinstein) are so recent as hardly yet to have come into general use. The misuse of morphin has certainly been accentuated by a knowledge, on the part of the public, of the hypodermic method of administration, and of the rapid results which follow its employment.

The use of remedies by hypodermic or subcutaneous injection is an outcome of the British school of therapeutics. Two men of inventive mind—Mr. Charles Hunter of London, and Dr. Alexander Wood of Edinburgh—have each claimed the origination of this method. I have often heard the late Mr. Francis Rynd state in the Meath Hospital that he was the first to employ it. The truth of the matter appears to be that the first attempts at hypodermic medication were made by Mr. Rynd[a] in 1845, while to Dr. Alexander Wood, in 1855, is due the popularisation of the method. It was Mr. Charles Hunter who gave the name of hypodermic to the subcutaneous method.

The opium habit, in the form of the hypodermic use of morphin, is more general and more on the increase than many think, and is indulged in rather by the refined and educated classes than by the lower orders. Many notices of its prevalence have lately appeared in America and on the Continent. According to Jouet the habitual injection of morphin is to-day, in France at least, almost a matter of fashion, and presents of pretty syringes in silver cases are exchanged on festive occasions. Zambaco, whose observations were made in Constantinople, says that the ladies of the better classes wear jewelled cases containing hypodermic syringes and artistic bottles for the morphin solution, and avail themselves of convenient opportunities to make reciprocal injections of morphin.

Morphinism has a particular interest for medical men, because quite an incredible number of our colleagues have fallen victims to it. Of Levinstein's 110 cases, 47 occurred in persons belonging to the medical profession, or dependent on it: thus, 32 physicians, 8 wives of physicians, 1 son of a physician, 4 nurses, 1 midwife, and 1 student of medicine, were among his patients. The acquisition of the morphin habit has often been laid to the charge of the medical attendant, who has been blamed for imprudent use of the syringe, or indiscriminate employment of morphin. These charges have been made by some who are entitled to speak with authority. For instance, Niemeyer, alluding to the morphin habit, observes this practice is not uncommon, and, as it is generally

[a] Dubl. Med. Press, 12th March, 1845. P. 167.

begun under the physician's recommendation, we may consider ourselves as responsible for its cure. Obersteiner, speaking of the prevalence of morphinism among the profession in Austria, hints broadly that, in his view, there is poetical justice in the fact that this fatal habit should work most havoc among the class of men who, by carelessly prescribing the drug, and instructing in the use of the hypodermic syringe, have been mainly instrumental in disseminating it.

The *origin of the habit* may, perhaps, as fairly, and, at all events, more charitably, be traced to some one or other of the following causes:—(1) Relief of pain; (2) insomnia; (3) melancholia. Besides these conditions, each of which is frequently directly relieved by the use of morphin, simple *curiosity* has laid the foundation of the habit. Obersteiner gives the case of a physician who was incredulous as to the rapturous ease which a cancerous patient alleged he had from morphin, and took one dose himself for experiment. This dose awakened a ravenous appetite, which he could never afterwards overcome. One of Dr. B. W. Richardson's patients told him he began the practice simply to ascertain what the effect was like, and that, finding it not unpleasant, he went on until he felt he could not live without its continuance. Mere *imitation* has been alleged as the cause of the habit by one who could give no better reason for it than that a friend who lived in the house with him had recourse to it, and that he "followed suit."

A receptivity for morphin is, fortunately, not the property of every constitution. It is only on certain individuals that it operates so as to produce intellectual excitement or psychical pleasure, and by creating an inappeasable hunger for a repetition of the dose, renders these individuals morphin habitués. With many even small doses cause such unpleasant effects that they have no wish to renew the experiment. Cases are well known of chronic illnesses which have required large doses of opium for a long time, often for years, yet the patients do not fall victims to the opium habit. It is, however, a drug not to be trifled with rashly; for the morphin habit has established itself in as short a time as a month in persons who are able to take it without feeling any of its ordinary disagreeable consequences.

As a general rule, but one to which there are exceptions, the shorter the time it has been indulged in the easier it is to cure. The morphin disease is also more amenable to treatment if it has

not been preceded by alcoholic excess; for, if so, the alcoholic habit intensifies the narcotic craving, and adds much to the difficulty of treating it. Dr. B. W. Richardson says he has never met with the morphin habit among total abstainers from alcohol. However, on the other hand, it is stated that the abuse of morphin has, in many cases, replaced the abuse of alcohol, especially in refined society, and that such is particularly the case in some districts where rigid total abstinence principles have been largely adopted by the inhabitants.

The quantity of the drug injected by a morphinist varies greatly. Few are satisfied with anything less than 3 grains in the twenty-four hours; many vastly exceed this amount; 15 or 20 grains are not uncommon quantities. In a case reported by Dr. Wm. Stuart of Hawkes Bay, New Zealand, the regular quantity used daily for some months was one ounce of the hypodermic injection of morphin (B.P.), which means a daily dose of 40 grains of acetate of morphin. The estimate of the amount was based on the statements of the patient and his wife, checked by the known quantities supplied by different druggists. It may here be observed that it is often difficult to ascertain the exact amount of morphin which is used, because morphinism like alcoholism induces a total disregard for truth, and, in most cases, habitual morphinists become such liars that a knowledge of this particular phase of psychical degradation is necessary to rightly estimate their statements. One of Obersteiner's female patients told him herself that no one should believe a morphinist, as they were all alike untruthful.

The inquiry is a very natural one—what becomes of those immense quantities of morphin, and how is it that acute opium poisoning is so rarely observed? In reply, it may be stated that the toleration of individuals is so variable, that what is a large dose for one is a moderate dose for another; moreover, the maximal doses have been arrived at by degrees, and are not initial ones. The following possibilities may also be suggested in explanation—that a process of accommodation may be set up in the tissues, resulting in a lessened degree of susceptibility, while, at the same time, with a slower absorption a more rapid excretion may be established. Furthermore, morphin is known to be eliminated with considerable rapidity by the kidneys, and a certain amount is also excreted by the mucous membrane of the stomach. Diedreich assumes that a portion of the morphin introduced into the organism is converted into oxydimorphin, or other analogous substances, which have the

property of counteracting to some extent the toxic effects of the drug. Whatever becomes of it, the fact is patent that the daily use, subcutaneously, of lethal doses of morphin may be persevered in for a length of time without the appearance of the symptoms of acute opium poisoning.

Diagnosis.—The question of diagnosis can hardly be said to arise when the habit is admitted and the applicant professes a willingness to give it up and an anxiety to be cured; but, even in such cases, there is a strange inconsistency in behaviour, as, in a case which occurred to myself of a young medical man, who, while lamenting his infatuation, and professing his desire to be cured, took a charged syringe from his pocket and injected himself through his trousers without waiting to strip his leg. This conduct was very similar to that of a lady under Dr. Richardson's care, who was dotted all over those parts of her body that were within her reach with the marks of the punctures she had made, who used to beg, while imploring him to get her out of the practice, to allow her to show him how she did it. Not unfrequently the real cause of the ill-health produced by morphinism is unsuspected by the family or friends of the patient, or the patient intentionally deceives the doctor by a total denial of the practice, or, if forced to admit it, misstates the amount or frequency of the dose. In such cases it is rather a question of *detection* than of *diagnosis*, and corroborative evidence of much importance is afforded by information that the patient procures morphin himself or through others, by the presence of the puncture marks of the hypodermic needle, or by the discovery of morphin in the urine. This latter point is not such an easy matter to determine, and as it requires an elaborate chemical examination, the urine should be submitted to none but a competent analyst. A diagnostic in morphinism has been derived from a study of pulse tracings. At a meeting of the Académie des Sciences, MM. B. Ball and O. Jennings made a communication to show that the pulse is normal during the period of satisfaction. When the patient begins to feel renewed craving the pulse presents a flat elevated surface, which indicates the diminution of cardiac pressure, and explains the sensation of weakness experienced by the patient. The presence of this flat surface may be useful in the diagnosis of morphinism. (*Brit. Med. Jour.*, May 7th, 1887. p. 1003).

Even when the morphin habit is suspected or admitted, the

amount or frequency of the dose can rarely be fully known, because one of the mental peculiarities of morphinists is secretiveness concerning the vice, and they invariably deceive those about them in regard to the details of their indulgence. Individuals above reproach in other matters, and previously of unquestionable veracity, lie without any hesitation in this matter. A patient under Dr. Wilson's care, who had secreted in her room a quantity of morphin, when about to undergo treatment denied either having taken or then having in her possession any opium or morphin whatever, using the expression, "I call God to witness that I neither now have, nor have had since I began the treatment, any preparation of opium or morphia whatever." Within ten minutes afterwards sixty quarter-grain pills of morphin were discovered secreted under her bolster. This patient was a devout, refined, and, in regard to other matters, a trustworthy person.

Prognosis.—The prognosis in morphinism is not so favourable as was at one time believed. Von Boeck is of opinion that the morphin habit belongs to the category of diseases which are almost incurable. The weaning from it is a laborious task for the patient as well as the physician, and yet thereon rests the only hope of recovery. It is considered by those who have had the largest experience of such cases to be easier to cure a morphin eater of his craving than a morphin injector. The probability of a cure may be estimated by attending to the following points:—(1) The duration of the habit—cases of short existence being more successfully treated than those in which the habit, of long standing, has exercised a deleterious influence on mind and body; (2) the persistence or not of the condition which gave rise to the use of morphin, for if this condition is irremovable a cure is scarcely to be expected; and (3) the physical and nervous constitution of the victim; because very weakly individuals fall into such a state of prostration on the withdrawal of their accustomed dose that it is necessary to give it again; and because intense psychical disturbance follows its stoppage in others of specially nervous temperament. Morphinism has been classed by some—as Laehr and Fidler—among the psychoses, but it is rather the expression of a morbid constitution than a substantive affection in itself; hence it is that nervous subjects, invalids, and individuals deficient in moral and physical tone, are specially prone to it.

The prognosis is not much affected by the magnitude of the daily dose, except in so far as the larger doses indicate chronicity

in the habit which in itself is an unfavourable point, even in the case of small doses. In Obersteiner's experience the prospect of a permanent cure is distinctly gloomy, unless all the conditions just now mentioned are fulfilled.

It is a hopeful consideration that in the majority of cases of morphinism to break the habit means to get well, because, unlike alcoholism, the morphin habit does not entail structural lesions of any vital organ. In relation to prognosis, it is well to bear in mind how frequent, in the experience of all, are relapses. They are more common in men than in women, and in persons of feeble physical and mental organisation than in those possessed of bodily and mental vigour. Of 82 men treated by Levinstein, relapses occurred in 61; of 28 women, in 10; of 38 physicians, in 26. The danger of relapse diminishes with the lapse of time; yet a single dose of morphin or a hypodermic injection may, after an abstinence of months, precipitate a relapse. A medical man, after four attempts at weaning, was treated in Obersteiner's institution, and dismissed apparently well, yet, after three months, he was again in his former state. So great is the tendency to relapse that Jaeckel does not consider a cure to be accomplished by the mere suppression of the morphin hunger. He lays great stress on a continuance of control over the patient in a proper institution, in order to guard as much as possible against relapses. Erlenmeyer contends that the longer a patient, after the discontinuance of the habit, continues under control in an institution the more favourable will be the prognosis of a permanent cure. He does not deny the possibility of successful treatment under propitious circumstances outside an institution; but he is quite opposed to the view of Wallé that treatment in institutions is not only unnecessary but even injurious.

Treatment.—Emancipation from morphin-slavery is unattainable by voluntary effort. Jaeckel is unaware of any successful case of self-treatment in morphinism, and does not advocate its being attempted, even in the case of medical men. The difficulty of breaking the morphin habit is greater in some cases than in others. It is considered to be easier to cure a morphin eater of his infatuation than a morphin injector. The process of cure, or of what Charcot calls demorphinisation, requires a degree of moral and physical courage seldom at the disposal of a morphin habitué. In the case of the highly gifted and more delicately organised, a fiery trial must precede deliverance. The abject

mental state of the morphinist calls for firmness, gentleness, and tact on the part of the physician and the attendants. Neither the intensity of his craving, nor the reality of his sufferings should be underrated or disputed.

The methods of treatment may conveniently be considered under four heads—(1) the *deceptive* plan; (2) the *substitution* plan; (3) the *tapering off* plan; (4) the *abrupt withdrawal* plan. The first two methods—the deceptive and the substitution plans—may be dismissed as hardly worth serious consideration in the management of confirmed morphinism. The deceptive plan, which consists in injecting water, or some solution not containing morphin, seldom does good for any length of time, and is often not even of momentary use to a real morphinist. The injection of a few drops of water, or the very prick of the needle, or even of a pin instead of it, may relieve slight local pains in very nervous or imaginative people, especially if a successful result has been emphatically predicted. In a morphin injector the association of ideas may, perhaps, lend a temporary charm to the sight of the hypodermic instrument, for I have seen the eyes glisten and depression vanish from the features upon the production of a syringe which contained no morphin; but the morphinist is not deceived a second time, and the indignation of one who feels he has been cruelly hoaxed is sure to replace any confidence that might have been reposed in the attendant who adopts the deceptive plan. The victim of morphin hunger is fully sensible that when he begged for bread he has been given a stone.

The substitution plan, which consists in replacing the morphin by some other drug, such as cocaïn or chloral, has been aptly described as handing the sufferer over from one enemy to another. The substituted drug sometimes produces even greater havoc than the one it has replaced, because of its introduction into a system already undermined by another toxic agent. Cocaïn is the drug which has been most championed as an antidote for the morphin habit. On the subject of the treatment of morphinism by cocaïn, Erlenmeyer has come to the following conclusions:—(1) That its use does stop the morphin craving; (2) that this effect is very transitory, lasting only from 10 to 25 minutes; (3) that cocaïn is a real substitute for morphin and not an antidote; (4) that it should not be given, as its effect is so temporary and its use dangerous. Moreover, there is great risk of developing a habit—cocainismus—which is worse than morphinism. (Brain, x., 533).

The treatment then is narrowed to a choice between the tapering-off plan and the abrupt withdrawal plan, and one or other of these methods is advocated by those who have found the particular course they adopted of use in special cases. There is no unanimity of opinion as to which mode of treatment should be employed, and, before coming to a decision on this point, the following matters have to be taken into consideration—viz., the duration of the habit; the dose which has become habitual; the cause of the habit; the effects it has had on the patient; and their strength of constitution. It by no means follows that the adoption of either method will be ultimately successful in any given case, so far as the cure of the practice is concerned, for it must be admitted that with the best efforts there are many failures to break the threefold cords of the morphin habit; but, nevertheless, failing cure, the patient may be restrained from resorting to increased doses, or the amount may be got reduced from a dangerous to a comparatively safe quantity. Whichever plan is adopted, the advantages are not to be overlooked or forgotten of careful regulation of the diet, change of air and scene, cheerful society, and the administration of tonic remedies.

The tapering-off plan consists in the gradual reduction of the dose, until none of the drug is required. For instance, a solution of morphin is made of known strength—say, so that each 20 minims is equal to one grain of morphin; then, after each 20 minims are taken from this solution, 20 minims of distilled water are added to it, so that the solution becomes gradually weaker. An analogous tapering off or weaning plan is adopted in the East in the case of opium chewers, by gradually mixing an increasing proportion of wax with the crude opium, till at last there is more wax than opium in the combined mass. Similarly in treating opium smokers, they mix more and more tobacco with the opium before ignition. In the tapering off plan, the patient should not be informed of the progressive diminution of the dose, for some, if acquainted with the details of the process, feel quite distinctly the withdrawal of a small fraction of a grain. Dr. B. W. Richardson considers it better to reduce the dose at each administration than merely to lessen the number of injections in the 24 hours. No tricks are to be played with the patient by injecting water or solutions devoid of morphin, for such behaviour destroys confidence. Erlenmeyer considers the tapering-off plan of treatment unsatisfactory because of the continuous supervision it requires on the part of someone who can be

implicitly relied on to provide against the surreptitious use of morphin; and he thinks it further undesirable on account of the prolonged misery it entails, because the duration of the weaning process must be proportionate to the dose which has become habitual. (Brain, x., 533).

The abrupt discontinuance of the drug (the method of Levinstein as it is called from one of its principal advocates) is attended in all cases by indescribable sufferings, and in many by serious dangers, among which collapse and a condition resembling delirium tremens are to be specially considered. Von Boeck, who approves of this method, considers the most effectual plan is to correct the habit suddenly, *uno ictu*, if we have to do with hardy individuals, admitting meanwhile that the great danger in this method is collapse, which he advises should be obviated by the copious use of wine.

When morphin is suddenly cut off in those accustomed to its use, a remarkable group of symptoms ensue, called the *Abstinenz Symptome*, or reactionary effects. They are severe and alarming. As enumerated by Obersteiner, they comprise acute diarrhœa; insomnia; great excitement, amounting at times to mania dangerous to those around, and particularly to the physician; hallucinations; and collapse. The *Abstinenz Symptome* are liable to occur under the tapering-off as well as under the abrupt withdrawal plan, but are seldom so severe under the former. This so-called reactionary stage may last from four to eight days, and, according to Von Boeck's description, the patient looks ill and emaciated, the eyes heavy, the respiration laboured; they suffer from dyspnœa, anxiety, palpitation, frequency of pulse, up to 120, perspirations, great irritability, dysuria, pains in all possible nerve regions (especially in the stomach and intestines), anorexia, thirst, diarrhœa, complete insomnia, and this state of things may terminate in death. The abrupt withdrawal of alcohol or chloral is possible and safe, but in the case of morphin it occasions the direst symptoms both objective and subjective, which nothing will relieve but morphin. Erlenmeyer, struck with the gravity of these *Abstinenz Symptome*, and particularly with the tendency to collapse, discards the system of sudden withdrawal adopted by Levinstein, and recommends a combination of the third and fourth methods—namely, the complete withdrawal of the whole quantity of morphin, not abruptly, but in from six to twelve days. By this compromise he hopes for a successful result, absolute freedom from danger, and a shortened period of suffering. It seems certain that, with enfeebled indivi-

duals, the amount of the accustomed dose must be gradually reduced, and in such cases the tapering-off plan is preferable to that of abrupt withdrawal. The abrupt withdrawal plan is most applicable when the morphin habit has not been confirmed by long use, and the dose injected has not been excessive. Erlenmeyer records some curious facts, showing that children born of mothers addicted to morphinism are affected just in the same way as if the drug had been directly administered to them and suddenly withdrawn. These infants are, in fact, congenital morphin habitués, and become liable to serious troubles, such as complete insomnia for as long as sixty hours (Jouet, p. 41), as soon as they are separated by birth from the source of their constant supply.

The *Abstinenz Symptome*, or reactionary effects, are liable to occur upon the sudden stoppage of the accustomed dose, whether the habit has been of long or short duration, They are more violent, and developed with greater rapidity, in some cases than in others. Some patients rest quietly in bed, enduring with fortitude sufferings from which there is no escape; others, silent and apathetic, present the appearance of abject despair. With the greater number restlessness is continuous, and very often extreme; they are with difficulty kept in bed—if left to themselves they run frantically about the room, moaning, bewailing their condition. and imploring the attendants for that which alone is capable of relieving their distress. This stage of excitement may gradually subside, giving way to a state of the most profound exhaustion, or it may develop into a condition which, being accompanied with hallucinations, delirium, and tremor, closely resembles the results of alcoholism. At times it is necessary to have recourse to physical restraint, as in a case reported by Von Boeck of a young doctor who could be cured of giving himself morphin injections only by being actually shut up in a room for more than a week. He resisted like a maniac, scratched at the walls with his nails, wept and shrieked from misery, ate nothing, was unable to sleep, and had diarrhœa. At last, after some days of untold suffering, he began to feel better—to eat and sleep. From that time his weight rapidly increased, his appearance grew fresh and healthy, and he recovered his taste for tobacco, so that he smoked and drank beer as in the days of his health. Having regard to the likely occurrence of these *Abstinenz Symptome*, the desirability of conducting the treatment away from the patient's home can scarcely be questioned,

and it is a fact that cases in which the home treatment of morphinism have proved successful are certainly exceptional.

The sudden interruption of the morphin habit by acute disease may give rise to very puzzling symptoms. Attention has been drawn to this matter (see *Lancet*, 1887, Vol. II., p. 300) by M. Richardière, in relation to the case of a physician, a morphin injector, who got pneumonia. Most alarming symptoms of dyspnœa, cyanosis, weak and irregular heart-action and excessive rapidity of pulse, caused the greatest anxiety for the result. M. Richardière believes that a fatal issue was prevented only by a recognition that these were the *Abstinenz Symptome* of a morphinist, rather than due to the pneumonia, and by a prompt recourse to the stimulant for which the system was craving.

In cases where the habit is denied or concealed Charcot relies for the diagnosis on the occurrence of the characteristic *Abstinenz Symptome* which supervene when the drug is withheld during the process of demorphinisation.

The assistance to be obtained from drugs in conquering the opium habit is maintained by Dr. Fleming, who advocates the sudden suspension of the habit as infinitely more efficient and easier to the patient than the gradual diminution of the dose. He recommends the administration of large doses of phosphoric acid and lupulin to counteract the immediate effects of the suspension of the drug. Having interdicted all use of opium, and taken the necessary precautions against its being obtained surreptitiously, he orders—Acidi phosphorici diluti, ʒx; tincturæ lupulinæ, ʒxxx.—M. Of this two drachms are to be taken in a large wineglassful of water every four hours. The dose may be increased or lessened according to circumstances. If insomnia is very protracted, he gives, at bed-time, the following draught:—℞. Tincturæ cannabis Indicæ, ♏. xxx ad lx; spiritûs ætheris, ʒi; aquæ sambuci, ad ʒss.

In the case of a gentleman, addicted to morphin for seventeen years, and who had sometimes taken thirty-two grains in the day, Dr. Seymour Sharkey found the most effectual means of quieting the extreme restlessness, which occurred upon the sudden withdrawal of the morphin, to be grain doses of extract of belladonna as suppositories, with ʒi doses of tincture of hyoscyamus. A detailed account of this very remarkable case, in which a cure of the habit seems to have safely been accomplished by the sudden stoppage of the drug, when used in enormous excess, will be found in the *Lancet*.[a]

[a] Vol. II. 1888. P. 1120.

The weaning process is facilitated in some by the administration of ammoniated alkalies, bitters, or ethereal substances. Thus, Coleridge experienced sensible relief from the use of ammoniated tincture of valerian.

Dr. Oscar Jennings, of Paris, from his sphygmographic observations on the pulse in morphinism, deduces the necessity of using, in the treatment of such cases, a circulatory stimulant of some kind to replace the withdrawn morphin. Of such medicines he has found nitro-glycerine to produce the same improvement of the pulse as morphin, and patients taking it declare the sensation of warmth and comfort following its use is like that which they experience on first receiving morphin after deprivation of it.

Great care is needed in the case of pregnant women addicted to opium, because incautious attempts to withdraw the habitual drug are, according to some authorities, almost certain to be followed by the loss of the fœtus. That this is not always so is shown by a study of Braithwaite's case of the abrupt plan of treatment in a young woman in the habit of using large doses of morphin. During the demorphinisation of a pregnant woman, a patient of M. Tarnier, the movements of the fœtus became so lively, and the uterine colic so sharp, that the process had to be interrupted (Jouet, p. 41).

Strange as it may at first sight appear, in the treatment of morphinism the question may arise, is it right or necessary to interfere at all? The decision in such a case turns upon the motive which led to the commencement of the practice. In the large majority of cases the alleviation of physical pain is alleged as the excuse; but if the person be a sufferer from malignant disease beyond the range of surgical skill, and if their pain be relieved, and life rendered endurable by habitual injection of morphin, there is little more interference called for than such as would lead to a systematic regulation of the dose within the limits of safety. The same course may be adopted in a case where symptoms of diabetes or heart disease are favourably controlled by the use of what would otherwise be excessive doses of morphin. In such cases it is impracticable, nor would it be desirable, to interfere with the habitual use of morphin. It may be even advantageous in some cases to acquire the habit. Dr. Lutaud believes that the methodical subcutaneous injection of strong doses of morphin, from two to nine grains daily, is highly beneficial in cancer of the uterus. It checks the hæmorrhage, causes the pain to disappear,

acts as a necessary stimulant to the patient, and prolongs life. His observations in this direction were suggested by his remarking that in female morphinists menstruation becomes suppressed directly the dose of morphin reaches a certain strength. (*Brit. Med. Jour.*, 5th Nov., 1887. P. 1,018).

It is noteworthy that a liking for morphin, amounting to what has been actually termed morphinomania, has been noticed several times in some of the lower animals—in cats and especially monkeys. A physician in Cambodia, M. Ludovic Jammes, communicated to the Académie des Sciences, Paris, through M. Vulpian, the case of some monkeys belonging to an opium smoker. These animals lived habitually with him in an atmosphere saturated with the products of the combustion of opium, and, moreover, were fond of eating the residue left in their master's pipe. It was observed that during prolonged absence of this man the animals, after four or five days, became languid, and showed all the symptoms of depression usual in demorphinication. On the return of their master the monkeys gladly resumed their habits, and recovered their good humour. The facts stated did not astonish M. Vulpian. who presented the communication to the Academy, under the title of "Morphinomania in Animals." (*Lond. Med. Rec.*, 15th Aug., 1887. P. 374.)

Levinstein,[a] in a recent paper on the "Convalescence" from morphinism, states that, were more attention paid to this critical period, fewer relapses would take place. The whole therapy of the convalescence after the withdrawal of morphin or cocaïn may be summed up in careful oversight of the patient, strict abstinence from alcohol, and the avoidance of all unpleasant psychic impressions. It is a notable fact that when several persons under treatment for morphinism are together in an institution for the care of such patients, they are very apt to associate with one another, to talk freely of their affection, and often to combine in deceiving the physician in charge. This association should be prevented, for there is nothing more ruinous to the recovery of the lost will-power than to allow the thoughts or conversation to run on morphin.

There are other directions in which the subject of morphinism presents points of interest—for example, in relation to medical jurisprudence and to life assurance; but the limits of the present communication forbid me from entering upon their consideration.

[a] Deutsch. med. Wochenschr. 1888. 35, 715. Inter. Journ. Med. Sci. 1888. P. 622.

Appended hereto is a list of some of the more important publications on the subject of morphinism :—

Bartholow.—"Hypodermatic Medication." 1882. P. 120.

Bernhuber.—"Ærtz. Intelligenzblatt." 1878.

Boeck, Von.—Vegetable Poisons. "Von Ziemssen's Cyclopædia," Vol. XVII.

Braithwaite, James, M.D.—"Lancet." 21st Dec., 1878. P. 874.

Burkhardt.—"Die chronische Morphium-Vergiftung." Bonn, 1877.

Busey.—"Philadelphia Medical Times." 1876.

Calvet.—Essai sur le Morphinisme. "Thèse de Paris." 1876.

Erlenmeyer.—Die Recidive der Morphium-Sucht. "Centralbt. f. Nervenheilkunde." 1879.

Fiedler.—Ueber den Missbrauch der Morphin-Injectionem. "Zeitsch. für prakt. Medicin." 1874.

Fleming.—"British Medical Journal." 15th Feb., 1868. P. 137.

Jouet.—"Étude sur le Morphinisme Chronique." Paris, 1883.

Kormann.—"Deutsche med. Wochenschrift." 1877.

Krage.—"Ueber Albuminuria und Glycosuria nach Morphium." Griefswald, 1878.

Kunz.—Die Morphiumsucht. Baier, "Ærtz. Intelligenzblatt," 1876.

Laehr.—Ueber Missbrauch mit Morphin-Injectionem. "All. Zeitsch. für Psychiatrie." 1872.

Leidesdorf.—Die Morphiumsuch. "Wien. med. Wochenschrift." 1876.

Levinstein.—Several Papers in the "Berl. klin. Wochenschrift." 1875, *et seq.* "Die Morphiumsucht." Berlin, 1877.

Lewin.—Ueber Morphiumentoxicationen. "Zeitsch. f. prakt. Medicin." 1874.

Martin.—The Opium Habit. "Philad. Med. Times." 1874.

Mattison.—"Philadelphia Med. and Surg. Rep." 1874. "New York Med. Record." 1876.

Michel.—Ueber Morphiuminjectionen und Morphinismus. "Würtemb. med. Correspondenzblatt." 1876.

Moinet.—On the Administration of Opium. "Edin. Med. Journ." 1875.

Obersteiner, H., M.D.—Chronic Morphinism. "Brain." Vol. II. Jan., 1880. P. 449.

Richardson, B. W.—Morphia Habitués and Their Treatment. "Æsclepiad." 1884.

Richter.—Casuistik zum Morphinismus. "Berl. klin. Wochenschrift." 1876.

Sharkey, Seymour, M.D.—"Lancet." 1888. Vol. II. P. 1,120.

Stuart.—"Brit. Med. Jour." 11th May, 1889. P. 1,051.

Whipham, Thomas, M.B.—"Clin. Soc. Trans." London, 1875. Vol. VIII., p. 108.

Wilson, James C., M.D.—Article on the Opium Habit and Kindred Affections. Vol. V., "Pepper's System of Practical Medicine."

Zambaco.—"De la Morphéomanie." Paris, 1883.

ART. XIX.—*Case of Obstruction of the Bowels successfully Treated by Laparotomy.* Under the care of J. J. CRANNY, M.D., F.R.C.S.I.; Surgeon to Jervis-street Hospital, &c.

So many lives have been lost from obstruction of the bowels, not only in former times, when medical treatment alone was adopted, but even recently and notwithstanding the advances in abdominal surgery, that I think it a duty to place on record the following case:—

G. C., aged sixty-five, an ex-military officer, sent for me early on the morning of Tuesday, October 1st, 1889.

The previous evening, after a fatiguing day, he had dined rather hurriedly on grilled turkey and sausages, from which meal he dated all his trouble. Through the whole night he was in pain and had sickness of stomach. A dose of morphin hypodermically gave him much relief. He was ordered hydrocyanic acid in draught. For the remainder of the day he was quite easy, and at the evening visit felt he would be all right after his bath, &c, next day; up to this no movement of the bowels. Next morning he had a rhubarb draught, which was soon rejected by the stomach. He was ordered a couple of colocynth and hyoscyamus pills, with 2 grains of calomel; these were also thrown off, and he took two more with a similar result. A large enema was administered this evening with a fruitless result.

Next day, October 3rd, I had the benefit of a consultation with my friend, Dr. P. J. Hayes. We ordered him ext. belladonna and succus papain exsiccat. in pill, every second hour, also a mixture containing liq. potassæ. and gentian. For two days there was an apparent lull in the symptoms, but no evacuation from the bowels, not even of flatus.

On the morning of the 5th of October he was ordered 5 grains of calomel. Soon after this his stomach began again to be sick, and the vomiting became stercoraceous. In the evening Dr. Hayes again saw him with me, when we agreed that an operation would be the only means of saving him, and we determined to perform it in the morning, should he consent. On Sunday morning he almost suggested the operation himself.

Accordingly, arrangements having been made, Dr. C. Hughes, our House Surgeon, administered ether, and, with the able assistance of Dr. P. J. Hayes, I opened the abdomen between the umbilicus and pubes; the congested and inflated small intestines came into view. Carefully searching for some time, we happily found a couple of bands from the omentum, constricting the upper part of the ileum. These bands were cut, and the bleeding points ligatured; a few hard scybala were moved on into the colon, and the wound sutured. Being again placed in bed, on recovering from the ether he vomited once only. His whole aspect changed for the better. He was kept under the influence of morphin, hypodermically administered, suitable nourishment was given in small quantity, and on Thursday, the fourth day after the operation, there were several large motions from the bowels. From this out he made an uninterrupted progress. There was slight suppuration in the wound, but it was only superficial, and he is now quite recovered.

The favourable result is in no small degree to be attributed to the devoted care and nursing of his wife, as well as to his own pluck, and his loyal and implicit obedience to directions.

ART. XX.—*Case of Fracture of the Skull, with Escape of Brain-Substance; Hernia Cerebri.*[a] By THOMAS EVELYN LITTLE, M.D., L.R.C.S.I.; University Anatomist, and Surgeon to Sir Patrick Dun's Hospital.

THE case I wish to detail (and the specimens of the lesion in which I exhibit) is one of fracture of the skull, in a child three years of age. The accident occurred on August 11, 1889.

The mode in which the accident occurred was this:—The father and mother of the child had been quarrelling—as their manner was—and, as an incident in the fight, the difference of opinion having been renewed after the mother went to bed with the child sleeping beside her, the husband seized a wooden stool, and flung it violently at his wife. His aim not being very steady, for reasons which the hour of the night—it was one o'clock—rendered easily intelligible, and the room being badly lighted, the missile missed the mother, but struck the child on the right frontal region. The infant, when it was recognised to be injured, was immediately

[a] Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, November 1, 1889. [For the discussion on this paper see page 524.]

carried by another man, who was present, to Sir Patrick Dun's Hospital.

The condition of the patient on being brought to hospital was as follows :—A considerable wound was observed on the right frontal region, which was bleeding slightly, and from which some lacerated brain-substance had escaped, and was escaping—to such an extent, indeed, that even the sleeve of the coat of the man who had carried the infant, and upon whose arm the poor child's head had rested, was bespattered with portions of the brain. Notwithstanding this, the child presented no symptoms of collapse or of concussion of the brain. It was quite conscious—so much so, indeed, that it resisted, and fought with the house surgeon on his attempting to examine the wound.

When I first saw the patient—about eight hours after admission—on removing the dressings from the head, it presented a scalp wound in the situation just below the right frontal eminence of about three inches in length, which was slightly gaping, and was stripped upwards from the bone, the periosteum of which was separated. The wound was full of broken-up brain substance and blood, which had also insinuated itself underneath the scalp-flap. On gently probing the wound with the finger, the sharp edge of a fracture of the calvaria, which extended backwards under the scalp wound, could be detected, with some, but very insignificant, depression. The size we had pretty accurately mapped out as about that of a florin. As to whether this portion of bone was fixed, or completely separated, I could not then satisfy myself, by any amount of investigation which I deemed to be justifiable; but it became subsequently obvious that it was fixed at the posterior part. The patient presented a total absence of any cerebral symptom whatsoever. The child was quite observant and intelligent, and had not had, nor then had, any of the symptoms of cerebral concussion or cerebral irritation. There was no paralysis of any kind, nor any muscular spasm; and sensation everywhere—as far as capable of being tested in so young a subject—was unimpaired.

Progress of the Case.—I do not intend to go through, in detail, the particulars, as recorded from day to day in the hospital case book, but shall just mention the main features which became developed in the case.

The patient lived to the evening of the 15th day, dying then after the supervention of a convulsive attack—due (as

we had diagnosticated it to be) to the occurrence of a diffuse arachnitis.

The phenomena which had developed in the interim, and on each of which I shall say a word or two, were:—Further and continued escape of brain-substance; discharge of serous fluid from the wound; hernia cerebri—gradually growing; divergence of head to right (2nd week); condition of wound; and mode of death.

The escape of brain-matter continued for some days, appearing on the successively-removed dressings up to the fifth day, after which it was no more observed.

The discharge of serous fluid from the wound—fluid which, from its characters and mode of occurrence, was obviously analogous to, and had the same source as that we are so familiar with as escaping from the ear in cases of fracture of the skull's base—was a feature in this case; and was remarkable in one particular—*i.e.*, its intermittence; it was tolerably copious primarily, for about the first forty-eight hours after the injury, when it ceased. It then recurred, to a slight extent and for a short time, on the seventh day, when it again subsided. For the last two days of the child's life, however, it again appeared with extreme copiousness, deluging and soaking the pillows and bedclothes.

A hernia cerebri—the occurrence of which we had anticipated, from the small size and obliquity of the wound in the dura mater—commenced to make its appearance on the eighth day, and gradually grew in size up to the time of death, when it had assumed about the size of half a large walnut. On the morning of the evening of death a large part of this fungus separated while dressing the wound; and, having been preserved in spirit, Dr. R. G. Patteson, who kindly undertook the investigation of the specimen, informs me as the result of his examination:—"It proved to be merely a piece of broken-down brain substance and blood-clot mixed; no trace of membranes."

The symptom of a persistent spasmodic divergence of the head to the right side (that of the injury) which appeared, and was present during the last week of the child's life, is one which I think more especially worthy of note, as being the only solitary motor phenomenon developed during the progress of this case, up to the occurrence of the final and fatal convulsion. There was no associated deviation of the eyes, which were easily and voluntarily movable in all directions. Upon this symptom I shall make a very brief remark further on.

As to the condition of the wound, it appeared to assume readily a very healthy character, which it maintained throughout. There was no deep-seated suppuration, or bagging of pus—in fact no suppuration except at the very edges, which were healthily granulating, and cicatrising at the time of death. There was at no period any offensive odour; and, indeed, as far as the physical senses can be a test, the wound remained aseptic.

The mode of death was by the supervention of a severe and protracted convulsive attack, which, although apparently commencing by a twitching of the limbs of the left side, was afterwards much more marked on, and eventually confined to, the right side.

Post-mortem Examination.—(The calvaria, brain, and membranes were exhibited). On examining the body after death, we observed a condition of things, which is in chief part to be still seen in the specimens before the meeting.

The position, size, and condition of the *scalp wound* were as I have described them above.

The *calvaria*, with the dura mater attached, are here to be seen. Just at and below the right frontal eminence there is a fracture of the skull, of approximately circular shape and of about the size of a half-crown piece, slightly depressed in front. Anteriorly and laterally, the bone is completely and sharply broken, but behind there is no fracture, or solution of continuity of bony tissue, the bone being here simply gradually bent inwards. A somewhat sharp point of the bone anteriorly, it can be seen, has penetrated and wounded the dura mater, a rent of about half an inch in length in which exists, somewhat obliquely situated with regard to the opening in the bone. The depression of the bone was only to the extent of three-sixteenths of an inch.

On examining the *brain*, we observe a deep excavation in the frontal lobe, corresponding in position and size to the skull fracture. It extends for the depth of fully an inch into the substance of the brain, is remarkably circumscribed, and is unassociated with any extent of laceration, or softening of the brain tissue in the neighbourhood. The surfaces of both cerebral hemispheres are covered with a layer of greenish-yellow lymph, beneath the arachnoid, following the course of the sulci over the sides, and even to a slight extent the base, of the brain. It is, curiously enough, somewhat more extensive and diffused over the left than over the right side.

Remarks.—This case suggests some very interesting and important points, with reference to the subject of the particular form of fracture of the skull of which it is an example.

In the first place, the extraordinary immunity from primary (and, indeed, often of even any subsequent) symptoms of a serious character, after severe and extensive brain injury, enjoyed by children of a tender age is markedly exemplified. I calculated that this child must have lost, from first to last, at least half an ounce of cerebral tissue; and yet up to the final and fatal convulsion, with the single exception I have mentioned—of the persistent deviation of the head to the side—there was not, during the whole course of the case, a single symptom of interference with brain function. Of course, too, the situation of the cerebral destruction—*i.e.*, almost wholly situated in the frontal region, in front of the now recognised motor area of the brain cortex—must be taken into account. We all know that the fact of the occurrence of extensive brain lesion in the frontal region without serious symptoms is a very old observation—one, *i.e.*, long antecedent to any of the modern definite ideas as to cerebral cortical localisation. But, in this individual case of mine, the situation of the lesion, taken in connection with the same exceptional and single motor phenomenon to which I have alluded (deviation of the head to the right) is in no small degree interesting and deserving of a few moments' attention to details.

It will be remembered that the recent observations of Ferrier, Horsley, and others, have located a small area of the cortex of the frontal lobe, occupying the posterior extremities of the superior and middle frontal convolutions, just in front of the ascending frontal convolution, as the focal centre of what is termed the "conjugate deviation of the head and eyes," to the same side. Now, if we compare the exact position of the lesion in my case with this localisation, we will observe that it (the latter) is just at its anterior part encroached upon by the posterior edge of the site of the fracture. The explanation, however, of the reason why, in this case, we had *not* (as I have mentioned, and as we certainly had not) the associated divergence of the eyes, I must leave to those who are more familiar with the interpretation of the minutiæ of cerebral localisation than I pretend to be. It may be that this case may suggest that the anterior part of this region is concerned with the lateral movements of the head, and its posterior part with the associated eye movements.

With regard to the laceration, and escape of brain substance, which occurred to such an extent in this case, there is, I think, one small point of some slight importance—I mean with regard to the precise mechanism of the brain extravasation. We know that laceration of the brain may take place from injury in different ways—thus, *e.g.*, it may occur as the direct result of the blow fracturing the skull, driving in, and perhaps comminuting the bone; or it may occur from cerebral *contre-coup*, at the opposite pole of the brain cavity. In the present case, there is, however, at first sight, an apparent difficulty in explaining the amount of brain destruction, and of brain actually lost. As you see, there is no competent depression, and no comminution, or driving inwards of the bone. It is—when we particularly examine the fracture, and the size of the opening into the brain cavity—scarcely conceivable that the amount of cerebral substance which is lost can have escaped *primarily* through such a minute, and such an oblique, opening in the skull and dura mater from any simple internal pressure. I think, then, that the probable interpretation lies in an appeal to the nature of the injury, the age of the patient, and the precise details of the pathological lesion. The subject is a young child, where the bones of the calvaria are notoriously thin, and pliable; and looking again at the specimen before us, you will observe—as, indeed, I have already pointed out—that the fragment of broken bone is bent in, and (as it were) hinged inwards (without being fractured) at its posterior part. Considering, then, the nature of the injury, and the force with which the blow must have been delivered, associated with the altogether disproportionate depth to which we observe the wound of the brain to have extended (especially when compared with the very slight amount of bone which remains depressed), is it not a probable—indeed I should say almost the only—solution of the difficulty that this hinging inwards of the bone (as I have ventured to call it) may have taken place to a much greater extent at the moment of the blow, and that the elastic infantile bone immediately springing outwards may have lacerated, and (so to speak) dug out, or spooned out the large amount of brain matter found in, and in the neighbourhood of, the wound; and which we can still see to be missing in the specimen? The amount of brain matter actually removed, with the very slight depression which existed, readily explains, also, another point—viz., the absence of symptoms, or rather the non-existence, of any brain pressure.

There are some interesting questions in reference to the treatment in this case, which might be discussed; but these I do not look upon as available, or suitable for discussion in this Section of the Academy.

Art. XXI.—*Cairo.* By Brigade-Surgeon Albert A. Gore, M.D., Medical Staff.

The capital of Egypt is situated in latitude 30° 6′, east longitude 31° 26′, on the right or E. bank of the Nile, in the sloping plain lying between that river and a projecting angle of the Mokattan Hills, 180 miles by water from Alexandria, a route now seldom travelled, and 131 miles by rail, sped over by express in three and a half hours. Two express and two ordinary trains leave daily from Mohazzeen Bey Station. It was constructed in 1855, the first ever made in the East, and passes *en route* Ramleh, Damanhoor, occupying the site of the ancient Roman Hermopolis Parva, where close by Napoleon was nearly taken prisoner by the Mamelukes in 1798, Kafr-ez Zyat, where the Delta is entered, with its amazing fertility; Tantah, celebrated for its fairs, each of which lasts eight days; Benha, noted for its orange groves and ruins of the old town of Athribis, yielding from time to time objects of Roman or Greek date. After passing Tookh station, about seven miles from Cairo, the first glimpse of the Pyramids may be seen to the south-west. On arrival omnibuses from the different hotels—Shepherd's, The New, Angleterre, Continental, Royal, &c.—meet the train, and numerous two-horse carriages and donkeys. Shepherd's Hotel, situated in the Este Keeyeh, is the oldest and most frequented by English and American visitors. The New Hotel is better situated, and under new management this year. Hôtel du Nil, in a main street off the Mooskee, is chiefly favoured by Germans, Hôtel Royal by French, and the Angleterre and Continental by English visitors. The charges average sixteen shillings a day. There are also the "pensions"—Vitoria, Muild Fink, &c. Lodgings are not easily procured, and are expensive. There are two clubs, the Khedivial and Sporting, the latter mostly military. Carriages cost £1 a day, one pice or four piastres the set down.

If health is a chief object, Egypt can be reached by a long sea voyage—the most economical, the Papayanni or Moss Steamers from Liverpool to Alexandria. The former call at Lisbon, Algiers, and Malta *en route*, and are well found. The fare is £14; return

ticket, £24. The fares by the P. and O. and Orient lines are somewhat higher, the passage quicker, and the steamers larger. The boats of the latter touch at Naples. Egypt may be reached in a week *viâ* Marseilles, or Venice. The steamers of the Rubattino line, starting from Genoa weekly, coast along the shores of Italy in view of some very beautiful and varied scenery, including the lovely Bay of Naples. On the return voyage an all-round trip can be taken to the coast of Syria, Acre, Jerusalem, Joppa, Damascus, Constantinople, Smyrna, Salonica, the Ionian Islands, Athens—all places of historic interest. Messrs. Papayanni issue return tickets from Liverpool, Lisbon, Algiers, Malta, Alexandria, Beyrout in Syria, Alexandretta, Limasol, Larnaca, and return for £30, a trip of about seven weeks.

From October to April is the best season for a residence in Egypt for those who intend to do the whole Nile voyage, but the best months are November, December, January, February and March, when the cool and dry north winds prevail. It is too cold to travel in Syria before April.

The mean annual temperature of Cairo is about 71° F. From the peculiar dryness of the atmosphere it is more susceptible of sudden changes, the thermometer often indicating variations of 12° F. between morning and mid-day, and as much between mid-day and evening. The early morning is invariably cool, but after two or three hours continues warm until sunset, when it rapidly cools. It seldom falls to 40° F. Fogs prevail during the first two months after the receding of the Nile. The coldest months are December and January; the hottest, August and September. The latter is especially disagreeable and moist. The humidity is principally controlled by the rise and fall of the Nile. Evening fogs descend quickly as the sun goes down, and in certain localities, at this season, malarious fevers prevail. The desert air is dry and bracing, but at night, during the winter, piercingly cold. The summer season extends from April to the end of September, and is ushered in by stormy, equinoctial winds, followed by the hot south Khamseer wind, at the sound of which visitors quickly depart. By the end of June the Nile begins to rise at Cairo, and reaches its maximum by the middle of September. As the river falls unhealthy exhalations arise in the delta, giving rise to ophthalmia, dysentery, diarrhœa, and ague. By the middle of November the river has retired within its banks. The average summer temperature is about 85° F. The winter, which begins in October and

ends in March, is attractive to invalids owing to its genial and uniform temperature. Rain seldom falls at Cairo—five or six showers during the winter months.

The climate of Cairo and the Upper Nile is generally advocated as being beneficial in phthisical and bronchial affections, chronic disease of the mucous membranes, congestive disease of the abdominal viscera, nervous exhaustion, debilitated circulation from progressive disease of the heart, especially when attending advancing years, scrofulous disease of every kind, and especially in the early stage of phthisis indicated by general delicacy of constitution, when the invalid, by regulating his movements, may command an almost uniform condition of daily climate for several months—first, by a short stay at Cairo, then by following the seasons as he proceeds up Nile to a climate where the heat is just sufficient to allow time to spend much of the day in the open air, returning to Cairo in March, and leaving about the middle of April, after a short stay at Alexandria, where the air is much cooler; finally, reaching home in the early summer months. In winter warm clothing is essential, and flannel should be always worn next the skin.

The Nile water, when well filtered, is agreeable, and is best flavoured by light Bordeaux and Rhine wines. The head should be well protected, the chill taken off the bath by the addition of warm water, and heavy foreign dishes avoided; sleeping in draughts should be avoided, and bedrooms on the ground floor.

From Khartoum to the sea the Nile flows a distance of more than 1,800 miles, at an average rate of about 3 miles an hour, increased to $4\frac{1}{2}$ miles at the height of the inundation, varying in breadth from 350 yards at Silsilis to $\frac{3}{4}$ mile above Cairo, passing six cataracts, the first met north at Assouan. An average rise during the height of the inundation at Cairo is 26 feet. The deposit, when dry, resembles pottery from the silica it contains. Regnault gives its composition as 11·0 water, 9·0 carbon, 6·0 oxide of iron, 4·0 silica, 4·0 carbonate of magnesium, 18·0 carbonate of calcium, 48·0 alumen. At Cairo and southwards to between Edfoo and Hayar Silsilis, the hills at either side of the river are formed of mummulite or magnesian limestone—a hard. white stone full of fossils. Beyond Edfoo this is replaced by Nubian sandstone; through this, at Assouan, primitive red granite (syanite) crops up. In the neighbourhood of Cairo there are several varieties in the nature of the strata, such as the "Red Mountain," a silicious red

gritstone, and the so-called petrified forest, a tract in the limestone desert covered with fragments of fossil wood. In the Mokattan hills innumerable varieties of petrified shell-fish are found. From the quarries of Toora and Masarah came the limestone blocks of which the Pyramids are made.

The Egyptian Flora consists of about 1,300 specimens, of which indigenous plants constitute the largest proportion; the desert species alone number 250. The ordinary European vegetables are easily obtained in Cairo. Most of the trees were known to the ancients, but the lebbekh acacia, with which nearly all the avenues round Cairo are planted, is a recent acquisition, and very valuable from the agreeable shade it affords.

The various elements of the motley population of Cairo may be divided into the Moslem, or Arab Egyptians; the Christian Egyptians, or Copts; the countrymen, or Fellaheen, and members of the wandering tribes—Bedasheen, Nubians, Abyssinians, Negroes, Turks, Levantines, Armenian Jews, Bedouins, and representatives from every European nationality, whose picturesque dresses are interesting to the new arrival, and add much to the scenic effect.

The first of the Fatemites in Egypt, Aboo Tummeem, built old Cairo, or Fostat, in A.D. 969, and it has ever since been the chief city. The Great Mosque of El Hakim was built A.D. 1003. In 1176 the Frank Crusaders attacked, and partly burnt Cairo, but Saladin quickly erected fortifications which still remain. About the same time that his dynasty came to an end, A.D. 1249, the French King, Louis IX., was taken prisoner in Egypt.

The town is upon the site of the Roman fortress of Babylon whose solid walls and strong round towers still bear evidence to its former strength, and account for its having defied the attacks of the western invaders for seven months. In this was quartered one of the three Roman legions, which formed the garrison of Egypt from B.C. 30 (time of Augustus) to Heraclius, A.D. 640, when, conquered by Omar, Egypt ceased to be a Roman province. In A.D. 973 the new city became the capital. Cairo was the residence of the Khalif, and capital of his dominions, until the overthrow of the Mameluke sovereignty in Egypt by Sultan Selim in 1517. It then became the capital of the Turkish province of Egypt. Modern Cairo is about three miles in length, by two in breadth, and occupies an area of about three square miles exclusive of the new Ismaileeyeh quarter. The old Frank quarter is now called the Mooskee—it was here that the first Franks who opened shops

in Cairo were permitted to reside in the reign of Saladin. The other quarters are the Estekeeyeh, Abdeen, and Ismaileeyeh, the last containing the more modern and fashionable houses. Notwithstanding western encroachments, Cairo has not quite lost its thoroughly Oriental character to the stranger—"full of romance, of picturesque wonders, of strange sights, strange noises, and strange smells."

At the time of the French expedition in 1797 the population was estimated at 260,000. By 1880, including the suburbs of Boolak and Old Cairo, it had increased to 370,000, roughly divided thus:—

Native Moslems - - -	260,000
Native Copts - - -	25,000
Abyssinians, Nubians, &c. - -	25,000
Turks - - - -	10,000
Jews, Levantines, &c. - -	30,000
Europeans - - - -	25,000

The population has, since then, largely increased. The most numerous classes of the population are the porters, then the vendors of eatables, glaziers, boatmen on the Nile, donkey and camel-drivers, water-carriers, coffee-house keepers, barbers, goldsmiths, chicken-rearers, hotel-keepers, potters, &c., &c. Its chief objects of interest are the Pyramids—a short drive of seven miles, the Boulec Museum, Coptic churches, numerous mosques, and the Citadel, from which a lovely panorama extends for many miles. The Citadel was built by Saladin in 1166, of stone brought from the small pyramids of Geezeh, and where the massacre of the Mamelukes took place by order of Mohammed Ali on March 1st, 1811.

The average birth-rate of Cairo, from six years' observation, was 51·8; more than a third of the native children born there die before they have lived twelve months, and more than half born are dead before they reach their fifth year. In 1887 the average death-rate in Cairo was 46·84; during the cholera year of 1883 it rose to 63·98. It has been stated that there were 224,000 cases of preventable disease in Cairo. The infant mortality is alarmingly high during the four hottest months—more than a third of the deaths are due to diarrhœa. During the year about 16,500 natives died at all ages; in more than 6,500 cases the deaths were due to diarrhœa, including a few cases of dysentery and typhoid fever. The principal causes are summer heat, impure

food, impure water, and impure air—mostly the result of contamination with human sewage—milk, ice, and other liquids poisoned by filthy water, or vessels washed in dirty water. It is calculated that there are in Cairo 54,000 houses; those not supplied by the Water Company are dependent upon wells or underground cisterns, filled at high Nile by infiltration or the Khaliz—an open drain which receives the contents of all cesspools along its banks, and from which the natives do not hesitate to drink. The wells are surrounded by soil blackened by sewage. The Cairo Water Company supplies upon an average about 68 litres per head, which includes the watering of the streets, against London, which is supplied with about 224 litres per head, and Paris, 177. The water is pumped up from the Nile to the pumping-station at Boolak, and thence to the filter-beds at Abbasseeyeh, whence it is distributed to the town. The Nile receives many pollutions, especially when low, when the current is insignificant—less than three inches per second; these, undoubtedly, react upon the water supply.

The desert air round Cairo is probably the purest in the world, but that of Cairo, with its crowded streets, its unclean habits, and its underground honeycomb of cesspools, has a marked cesspool smell, especially noticeable in the autumn months. A combination of sulphuretted hydrogen, ammonia, and a fœtid organic vapour, either itself the cause of disease or the carrier of the germs of typhus, diphtheria, and dysentery—sapping the health of the population, which becomes anæmic and wanting in health and energy, the children who survive looking pale and unhealthy. At low Nile the water is about 18 feet below the ground surface at Cairo, rising at high Nile to within 5 feet, and during an exceptional flood to within 2 feet of the surface.

When cholera occurred in 1883, it was first reported in the capital on July 16th. Up to 1886 European and native houses alike contained closet, kitchen, bath, or laundry, draining directly without any trap into a porous cesspool, either beneath the house or in its immediate vicinity. The cesspool odour pervaded the house when windows and doors were closed, mosquitoes were numerous, and many preventable outbreaks of typhoid fever occurred among the susceptible inhabitants. Many improvements have been made since then under the guiding influence of Dr. Greene Roche, Director-General of Public Health.

In 1887 122 admissions for enteric fever occurred at the Citadel

Hospital, with 30 deaths, and 9 at Abbasseeyeh, with 1 death—a considerable increase in the ratios of admissions and mortality as compared with the preceding year, which the medical officer in charge attributed to the local insanitary conditions, the unusually high Nile, and its rapid fall. When the Nile was at its height and began to fall the greatest number of admissions occurred—viz., 23 in September, 30 in October, and 12 in November. As the river rose it percolated the soil, disturbed the filth in the ground, and also the contents of the cesspools in which Cairo abounded, pressing the insanitary material to the surface, and under the hot sun causing poisonous emanations to rise into the air. There was also a higher ratio for simple continued fever, the admissions increasing with the rise of the Nile, falling somewhat when the river was at its height, increasing again when the river began to fall, and after a time falling steadily as the waters subsided. Of the total 1,092 admissions, 785 were at the Citadel Hospital, which the medical officer in charge thought was largely due to the local insanitary conditions, as in enteric fever, intensified by the unusually high Nile. A very large proportion came from Kasr-el-Nil Barracks on the left bank of the river, the ground in the vicinity of which was "little better than a fœtid swamp at the falling of the river." The native and European civilian population was affected similarly as the troops.

The Welsh regiment was quartered in Kasr-el-Nil Barracks for ten months, Abbasseeyeh two months, with small detachments at Assouan and Assiout:—

Average annual strength - -	776
Admissions into hospital - -	1,290
Deaths - - - -	16
Invalided home - - -	13
Average number constantly sick -	71·60

during this unhealthy year quartered on the banks of the Nile; average duration of each case of sickness, 20·11 days. The Hussars, quartered at Abbasseeyeh, away from Nile emanations, and exposed to the desert air during twelve months, had only 334 admissions out of an annual average strength of 368, no deaths, and but 8 invalids—a marked contrast. The troops in the Citadel, 300 feet above sea-level, the barracks freely exposed to prevailing wind, well ventilated, drainage good, no cesspool, water supply satisfactory, were also healthier.

There were, during this year, in the Egyptian command, with a

very small force on the frontier of picked men, twenty-two years of age, and relieved every six weeks—

Average annual strength - -	5,272
Admissions - - - -	5,821
Deaths - - - -	81
Invalided - - - -	141
Average daily sick - - -	365·19
Average constantly sick per 1,000 -	60·26

The more important diseases in order of frequency of occurrence were—

Simple continued fevers - -	1,092	Deaths	*nil*
Diseases of digestive system -	632	„	7
„ generative system -	624	„	*nil*
Gonorrhœa - - -	428	„	„
Diseases of the skin - -	305	„	„
Diseases of the eye - -	257	„	„
Dysentery - - -	230	„	5
Primary syphilis - - -	208	„	„
Diseases of lymphatic and glandular systems - - -	180	„	„
Secondary syphilis - -	173	„	„
Enteric fever - - -	157	„	37
Diseases of the connective tissues -	157	„	„
Malarial fevers - - -	126	„	„
Debility - - - -	117	„	„
Respiratory diseases - -	107	„	3

All others were under 100 admissions each. Rheumatism accounted for 77 admissions and 1 death; tubercular diseases, 11 admissions and 4 deaths; parasitic diseases, 21; alcoholism, 34, and 1 death; there were no admissions for scurvy. Nervous diseases, 17 admissions and 3 deaths; small-pox, 26, and 4 deaths; other eruptive fevers, 32—27 of which were scarlet fever cases, a mild epidemic of which broke out amongst the troops in October. The source of infection could not be traced.

The chief cause of mortality was enteric fever, 37; digestive diseases, 7; dysentery, 5; small-pox, 4; circulatory system, 4; respiratory, 3; nervous diseases, 3; tubercular diseases, 4; alcoholism, rheumatism, poisons, 1 each; general injuries, 4; bowel, 6. Total, 80.

Rates per 1,000:—Admissions - - -	1,271·9
Deaths - - -	36·88
Invalided - - -	83·80
Constantly sick - -	74·17

Of the 257 admissions for diseases of the eye, it became necessary to invalid only 2; only 1 was finally discharged as unfit—a very satisfactory result compared with more ancient history. Nearly all the admissions were due to conjunctivitis of a mild type.

The Citadel Hospital was opened as a general hospital in 1882, and from that date until December 31st, 1888, there passed through the hands of its medical staff—24,477 sick; 342 died; 1·4 per cent.

Year	Average Strength	Average Daily Sick	Admitted	Died	Enteric Admissions	Enteric Deaths	S. C. F. Admissions	S. C. F. Deaths
1882	3,701	276	1,555	56	143	36	321	2
1883	3,480	226	3,722	67	130	18	392	0
1884	3,342	230	4,210	28	60	13	407	0
1885	3,505	287	4,883	56	104	28	417	1
1886	3,456	292	4,543	46	62	17	474	0
1887	2,674	211	3,273	53	122	30	785	0
1888	2,183	138	2,291	36	65	14	392	0
Total	22,341	1,660	24,477	342	686	156	3,188	3

Averages for Seven Years.

Average Annual Strength	3,191
„ Daily Sick	237
„ Annual Admissions	3,497
„ „ Deaths	48
„ „ Enteric Admissions	98
„ „ Enteric Deaths	22
„ „ S. C. F. Admissions	455
„ „ S. C. F. Deaths	0·43
Percentage of Enteric Deaths to Cases Treated	22·8

Extending over a period of 7 years, this may be looked upon as the normal rate of deaths under all methods of treatment—2·8 per cent. more than at Alexandria. In 1888 there were 392 cases of

simple continued fever admitted, but no deaths. Enteric fever, 65 admitted, 14 died; ratio per cent., 7; mortality, 21·54.

January 1*st to July* 31*st*, 1889.

	Admitted	Died	Ratio per cent.
Enteric fever - -	20	3	15
Simple continued fever -	20	0	0
August.			
Enteric fever - -	28	4	14·29
Simple continued fever -	107	0	0

The first detachment of troops proceeded "up Nile" on July 8th, and the operations ceased on the 12th of the following month. The increased admissions in August are thus accounted for. This influence was most felt in the period dating from August 2nd to September 23rd; for when we received 52 cases of enteric, only one had not been "up Nile." Of this number only 7 died, though the type of fever was severe—a mortality to cases treated of 13·46 per cent.—very low for Egypt, and considering that several were admitted in a late stage of the disease. Thirty-nine cases were from the 2nd R. I. Regiment, a corps which suffered much from its short trip up the river. The K. O. S. Borderers, who left later and never reached Assiout, yielded only 3 admissions. In these 52 cases there were two undoubted second attacks, and one long case, a gunner, had liver abscess as a sequence.

It may not be uninteresting to note the general line of treatment. The use of quinine as an antipyretic was not attempted, and little given at all. Dietary—Milk diluted with one-third lime-water, beef-tea, brandy given mostly in all cases about the 10th day, sponging with tepid water twice daily, or oftener, antifebrin given when the fever was high, but only if the patient was robust; mustard sinapisms to abdomen if there was pain or tympanites; if more than four motions in 24 hours, sulphuric acid mixture; if there was constipation, ʒii. to ʒv. of castor-oil; light clothing over body, keeping the feet warm; quinine when convalescing. The average duration of death cases was 13·5 days; of recovered, 62.

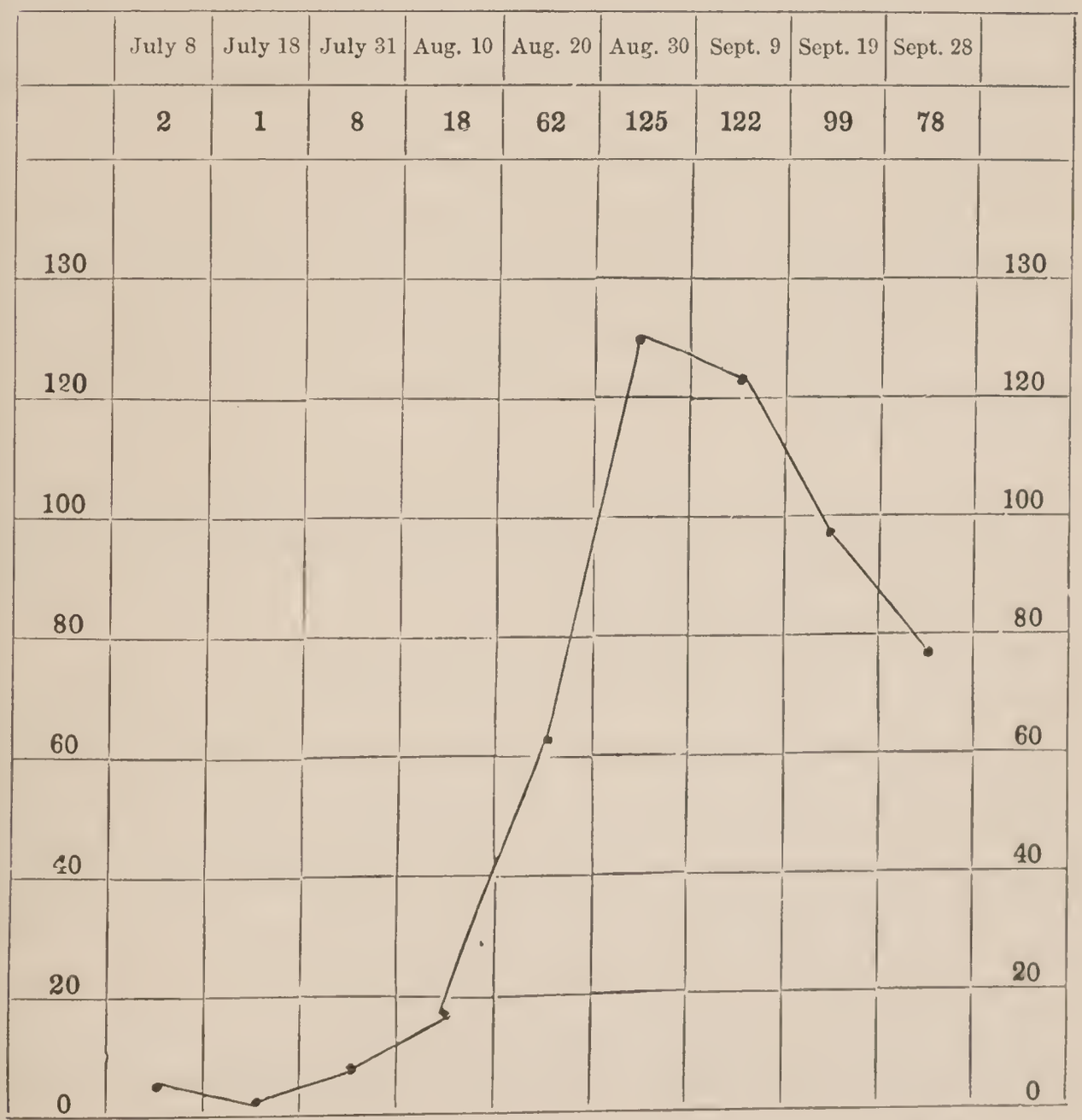
A very large proportion of the admissions at Cairo were over 21 years of age, although the minimum for the troops proceeding "up Nile" was 20, and there were many serving of that age. Of the 7 fatal cases, 1 was 29, another 25, 3 had completed 24 years, 1 was 23, and 1 was 22.

I asked a private of the 2nd R. I. Regiment on his discharge

from hospital (age 25, service in Egypt $1\frac{9}{12}$ years, and who had simple continued fever at Alexandria) what he thought gave him enteric fever, and how he got there? He replied that he went by train to Assiout, went in barges towed by steamers as far as Assouan, was in them four days. He became ill eight days after arriving at the latter station, and went to hospital. Thought it was the Nile water, as the porter was too hot to drink. The barges were covered, and there were no bad smells. His regiment left on July 8th, 503 strong, and from that date to September 27th had 201 admissions to hospital and 7 deaths—6 enteric, and 1 abscess of liver. They returned on August 12th to Abbasseeyeh, where they joined the companies from Alexandria.

The following shows the gradual rise and decline of sick ineffectiveness as the effects of the trip up Nile began to be felt and wore off—twelve weeks :—

Remaining in Citadel Hospital—1st Royal Irish Rifles.



The prevailing diseases, dysentery and diarrhœa, fevers and venereal—some of the latter carried up in a period of incubation.

The following brief notes of the seven fatal cases of enteric in the 2nd R. I. Rifles, all contracted "up river," give the leading features and *post-mortem* appearances of this type of fever:—

Case I.—Died August 22nd, age twenty-three; service, three years; previous health good; origin, field service. Admitted with high fever, brown tongue, great weakness, diarrhœa, rose spots on abdomen, rapid pulse.

Treatment.—Tepid sponging, ice to head, brandy and egg, beef-tea, milk, sedatives to procure sleep.

Post mortem.—Lungs considerably congested; mesenteric glands enlarged; spleen, 9 oz., friable, dark, jelly-like; small intestine, lower two-thirds in a state of extreme congestion, approaching ulceration; large intestine much congested.

Case II.—Died August 23rd, age twenty-two; service, two years; previous health, ailing a fortnight; origin, field service. Admitted with abscess of tonsil; type of fever very severe, with nervous delirium; died collapsed.

Treatment.—Dietetic, stimulant; turpentine.

Post mortem.—Lungs slightly congested posteriorly; mesenteric glands considerably enlarged; spleen, 10 oz., firm; small intestine, all Peyer's patches, and solitary glands extensively and deeply ulcerated, especially near ileo-cæcal valve; about four feet above valve a clear, round perforation; large intestine congested, especially in cæcum; no ulceration or glandular affection.

Case III.—Died August 23rd, age twenty-five; service, four years; previous health good; origin, field service. Admitted with fever; tongue dry and brown, iliac tenderness, base of lungs congested, slight delirium, afterwards severe collapse.

Treatment.—Dietetic, symptomatic, and stimulant.

Post mortem.—Lungs, lower lobes congested; mesenteric glands greatly enlarged and softened; spleen, 15 oz., engorged, and substance friable; small intestines deeply congested, with several petechial and hæmorrhagic patches scattered throughout; all Peyer's patches and solitary glands infiltrated, and mostly in process of ulceration; in caput cæcum numerous round, sloughy ulcers; mucous membrane of a deep purple colour; large intestine deeply congested throughout.

Case IV.—Died August 30th, age twenty-nine; service, eleven years; previous health good; origin, field service. Admitted with fever, con-

siderable nervous excitability, diarrhœa, abdominal tenderness, rose rash, sense, "status typhosus."

Treatment.—Dietetic, stimulant, small doses of antifebrin.

Post mortem.—Lungs, bases congested; mesenteric glands enlarged and matted together; spleen, 21 oz., very much softened and friable; small intestines, Peyer's patches and solitary glands extensively ulcerated; towards lower end of ileum very deep; 2 feet 6 inches lower end of small intestine deeply congested; numerous patches of superficial hæmorrhage; large intestine congested, especially in cæcum.

Case V.—Died September 19th, age twenty-three years; service, five years; previous health good; origin, field service. Admitted with high fever, furred and flabby tongue, considerable prostration, characteristic diarrhœa, doubtful spots, delirium, persistent high temperature, great gastric irritability, hæmorrhage.

Treatment.—Symptomatic, stimulant, turpentine, bismuth, gallic acid, opium, astringent.

Post mortem.—Lungs, hypostatic congestion; mesenteric glands enlarged; spleen, 16 oz., substance friable; small intestines healthy to ileum, where all Peyer's and most of solitary glands were deeply ulcerated, some presenting point of hæmorrhage; large intestine, one very deep and bleeding ulcer in caput cæcum, some few smaller.

Case VI.—Died September 17th, age twenty-four years; service, five years; previous health good; origin, field service. Admitted with high fever, diarrhœa, dry brown tongue, delirium, cerebral symptoms.

Treatment.—Diaphoretics, antifebrin, frequent sponging, &c.

Post mortem.—Lungs, right much congested, left at base; mesenteric glands greatly enlarged and softened; spleen, 8 oz., deeply congested, soft, friable; small intestine deeply congested throughout; cæcum congested and ulcerated; all Peyer's patches and solitary glands congested, some ulcerated; large intestine, several large sloughy ulcers lower part of ascending colon; mucous membrane of a deep purple colour.

Case VII.—Died September 17th, age twenty-two years; service, four years; previous health indifferent; origin, field service. Admitted with bronchitis, pneumonia, frequent cough, diarrhœa, hæmorrhage.

Treatment.—Poultices, expectorant, stimulant, turpentine, astringent.

Post mortem.—Lungs congested; mesenteric glands greatly enlarged, softened, friable; spleen, 9 oz., healthy; small intestine congested throughout, with many ulcers; large intestine congested throughout.

Such was the Nile enteric fever of 1889. In the same year at Alexandria, up to October 19th, 14 cases were treated, with 2 deaths—a mortality of 14·4 per cent. Quinine was not made use

of, but the German and American abortive and antiseptic system adopted, with attention to diet. In both the fatal cases the disease was probably contracted at Cairo, from which the patients had arrived not long previous to admission. Age, twenty and twenty-three respectively. Death occurred on the fifth day in the first, of ambulatory typhoid, judged by the condition of the intestines and spleen; in the second, in a relapse from perforation, after a stay of nearly three months in hospital. Spleen enlarged, congested, 19 and 17 oz.; mesenteric glands enlarged; small intestines extensively diseased, and large intestine congested. In the first, 14 ulcers in various stages; in the other, between 20 and 30. There was a very marked similarity in the *post-mortem* appearances, although the one was a primary attack, and the other a very distinct relapse.

ART. XXII.—*Albumen-Maltose and its Preparation.* By V. BUDDE, M.D., K.D.; Editor of "Ugeskrift for Læger," Copenhagen.

IN the long series of the various morbid conditions of the system, it presents a task to convey to the organism aliments which combine a high nutritive value with an easy digestibility, and in this way to re-establish the impaired balance in the tissue changes, or perhaps bring about a marked increase in the nutrition without taxing too much the enfeebled digestion, and without diminishing still further the weakened appetite. This, of course, is particularly the case in affections of the digestive organs, where the conditions for the physiological transformation of the aliments, and for their absorption, are so frequently altered. But it is also of importance in many other diseases, in which there are not only considerable digestive derangements, with impaired assimilative powers, but in which it is of the utmost importance, for the recovery of the patient and to prevent the development of complications, that his strength should be maintained, if not improved, by a nourishing and yet easily digestible food. Among such morbid conditions may be mentioned convalescents from typhoid and other fevers, chronic affections of the respiratory organs, scrofula, anæmia, &c. Besides, it is well known that individuals, healthy in other respects, suffer from weakness of the digestive organs, and for these it is imperative that they confine themselves to nourishing and easily digestible foods.

To fulfil these indications, under the circumstances mentioned,

a great many more or less composite preparations have been prepared, during the last few years.

The fats, cod-liver oil and its preparations, have this disadvantage—that they frequently disagree, give rise to further digestive derangements, and, besides, patients often take a dislike to them. The last objection also holds good in the case of the different meat preparations—Leube's meat solution, Koch's and Kemmerich's meat peptones, the different forms of meat powder, fish powders, &c. These preparations contain a large quantity of albumen, and are, to that extent, of very great nutritive value. They are, therefore, specially fitted for strengthening and recuperating the tissues, when the indication is to re-establish the diminished quantity of albuminous substances in the body, and where the condition of the organs permits their physiological transformation and absorption. In fact, under these circumstances they have given very satisfactory results. On the other hand, it is also a fact that these preparations, and particularly the meat powders, do not agree with the patient's taste. Especially when they are not quite fresh they have a taste and smell which patients dislike so much that they will not continue to take them. Another group of concentrated and easily digestible aliments is that in which the carbo-hydrates play the chief part. This group contains, as is well known, a great many preparations, solid as well as fluid. Often it is the starchy ingredients, sometimes the sugar, or it may be the transitions between these (dextrin, &c.), which predominate.

Also other preparations. as, for instance, the strong beer sorts—cacao, syrup of malt, different kinds of meal, &c.—have their applicability where they can be used with more or less success; but this territory has also its limits on account of physiological as well as pathological reasons. The most important of these limits is, that the quantity of albumen in these preparations is much too small for conveying to the organism the very often necessary quantity of histogenetic food-stuffs. Besides, the carbo-hydrates very often cause abnormal fermentation in the digestive organs, so that not only will the nourishment be defective because the absorption processes in the digestive channel are being enfeebled, but any catarrhal condition that may be present will be aggravated. Lastly, it should be mentioned that certain of these preparations, especially some of the beer varieties, contain a quantity of alcohol which will frequently do harm.

A preparation which hitherto has not been much known in the

therapeutics of food is albumen-gluten. There are certain kinds of meals—as, for instance, pease-meal, bean-meal, oat-meal, &c.—which contain proportionally considerable quantities of albumen, and which have therefore been used as restorative aliments. These meal preparations have hitherto had this defect—that neither the starch nor the albumen in them is of a nature particularly easy of digestion, so that they frequently disagree, or at all events do not bring about the intended benefit.

For albumen-gluten to be prominent in a concentrated aliment, distinguished both by its absolute nutritive value and its easy digestibility, and for it to form a suitable mixture with the different food components, so that it may be specially fitted for the sickly conditions we are here thinking of, it must first be separated from its natural combinations, and then mixed with other substances in such a manner and in such a proportion that the requirements before mentioned are quite fulfilled. Here we at once meet with a special technical difficulty—a difficulty which hitherto has not been overcome in any satisfactory manner. When gluten is separated from wheat flour, it forms a tough mass like caoutchouc, and cannot directly be used as an aliment. This mass can, by a suitable process, be rendered very easily digestible. By reducing it to a very finely divided condition, it forms, with other substances, a suitable compound, and yields, in a palatable and easily digestible state, a nitrogenous aliment, in which are found, in a suitable condition and in a proper proportion, the most important components of a typical physiological food-albuminous matter and carbo-hydrates.

This problem is solved in a very satisfactory manner by Albumen-Maltose, prepared by the firm of Leerbeck & Holm, of Copenhagen, and exported by Messrs. T. & S. Plum. This preparation is made of gluten, and undergoes a special treatment in its production. It is very finest pulverised, and mixed with different preparations of malt.

The analysis made by Professor F. Stein, of Copenhagen, is as follows :—

Albuminous Matter - -	15·06 per cent.
Carbo-Hydrates and Fats - -	29·63 ,,
Maltose - - - -	48·78 ,,
Chlorides and Phosphates - -	2·73 ,,
Water - - - -	3·80 ,,

It is in the form of a fine powder, with an agreeable smell and

taste, and is very easily preserved. With boiled milk, it forms a pleasing drink, in which are found, properly mixed, the nutritive ingredients necessary for the tissue changes in the organism.

The preparation has, in the course of the last few years, been used very extensively in the Scandinavian countries, particularly in Denmark, and many physicians who have used it in their practice praise it highly, both as an easily digestible aliment, and for its marked recuperative properties.

In an article in the *Ugeskrift for Læger* (*Weekly Medical Gazette*), 4 R. B. XIII. (Fourth Series, Vol. XIII.), No. 6, 7, Dr. Mügge says that he has given albumen-maltose to patients in his hospital, as well as his private practice, in cases of consumption, and from the results obtained by its use he recommends it to his colleagues.

Dr. Haugstedt writes:—"Albumen-maltose I have frequently used in my practice in the cases of children who were not thriving, and am satisfied with the results attained."

Extensive experiments were made at the Hospital of Tonsåsen by the Head Physician, Dr. K. F. Andvord, who writes, on March 3rd, 1889—"During the last two or three years I have frequently given albumen-maltose to the patients of the Sanatorium in the winter as well as in the summer. Now, as before, I can only express my satisfaction with this aliment. It seems to be particularly effective in improving and remedying the condition of mal-nutrition, where the organism specially requires abundant and easily digestible food, without taxing too much the assimilating organs, heart, and lungs. It is also of great importance that the powder keeps well, is palatable, and very handy."

After all, it can be said that albumen-maltose has proved to be a good and a useful remedy in the therapeutics of food; not only in digestive derangements and respiratory diseases, but also in constitutional affections, as scrofula, anæmia, &c.

The easy digestibility of albumen-maltose has been proved by artificial digestive experiments also. The Secretary of the Chemical Department at the Karolinska Institute, in Stockholm, writes—"According to trials made, it has been proved that the albuminous matter in maltose is very easily digested. On this account, and taking into consideration the whole composition of the powder, it seems to possess properties which render it an easily digested and highly nutritious food. The easy digestibility of the preparation may particularly depend upon the ferments of the malt being preserved in it. They will transform the small quantity of starch

which is present and most probably play a part in the digestion of the albumen of the preparation, the process being greatly facilitated by its finely divided condition. In many cases it is, no doubt, also of great importance that the quantity of fat in albumen-maltose is proportionally very small—below 2 per cent. The large quantity of maltose and dextrose which it contains is, of course, possessed of very solvent properties. It might be important to combine albumen-maltose with an easily assimilated and non-astringent iron preparation, because in the majority of diseased conditions in which albumen-maltose is indicated the organism also requires an increased supply of iron. The same manufactory has solved this problem also in a satisfactory manner, by compounding albumen-maltose by a special process with prepared ferrum oxidatum. This mixture is so readily soluble that it very quickly forms a clear solution with cold water, and, besides, it is almost tasteless and free from astringent preperties. The proportion of iron oxide in the preparation of albumen-maltose with iron is 0·50 per cent. Each teaspoonful will therefore contain 2·50 centigrammes of iron in a readily soluble form, and the physician will thus be easily able to vary the quantity of iron according to the requirements of the individual case."

ENDOTHELIOMA OF THE OVARY.

Mary A. Dixon Jones, M.D. (*New York Medical Journal*, Sept. 28th, 1889), has an interesting paper on a "Hitherto Undescribed Disease of the Ovary," an endothelioma changing to angeioma and hæmatoma. Twelve cases are recorded in which the ovaries were removed and exhibited the above diseased condition, and the paper is illustrated with ten excellent woodcuts of the microscopic appearances of the organs, showing the succession of morbid changes very clearly.

ELECTRIC BATTERY OF STORAGE CELLS.

Dr. J. H. Girdner exhibited at the New York Academy of Medicine a battery composed of one, two, or more storage cells, which could be charged from a dynamo or from ordinary cells. He attached the battery successively to a motor, a cautery, an arc light, and a faradaic vibrator, and decomposed water with the direct current. A double-celled battery cost about 50 dollars. The cells improve with age.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF CHILDREN.

1. *Cyclopædia of the Diseases of Children: Medical and Surgical.* The articles written especially for the work by American, British, and Canadian authors. Edited by JOHN M. KEATING, M.D. In Four Volumes. Philadelphia: J. B. Lippincott, Company. Edinburgh and London: Young J. Pentland. 1889. 8vo. Vol. I. Pp. 992. Vol. II. Pp. 1066.
2. *The Diseases of Children: Medical and Surgical.* By HENRY ASHBY, M.D. Lond., M.R.C.P.; Physician to the General Hospital for Sick Children, Manchester; Lecturer and Examiner in Diseases of Children in the Victoria University, &c.; and G. A. WRIGHT, B.A., M.B., Oxon., F.R.C.S. Eng.; Assistant-Surgeon to the Manchester Royal Infirmary, and Surgeon to the Children's Hospital. London: Longmans, Green & Co. 1889. 8vo. Pp. 681.
3. *Lectures on Children's Diseases.* A Handbook for Practitioners and Students. By DR. E. HENOCH. Vol. I. Translated from the Fourth Edition (1889) by JOHN THOMSON, M.B. London: The New Sydenham Society. 1889. 8vo. Pp. 493.

ONE of the most striking features of the present age is the increasing value which is being set on the health and happiness of children in every civilised community. For generation after generation child-life has waged an unequal conflict in town and country, not merely against its deadly foe—disease, but against ignorance, neglect, and general mismanagement.

Many years ago, while making a sanitary inspection in one of our Dublin slums, we asked was there much sickness in the place. "Oh, no! there was only a child, and it was sick with the chincough," was the reply. "Only a child"—these words grated harshly on our ears, and yet they were uttered in good faith by the speaker. It was a startling evidence of the little importance

so often attached to the sickness, to even the death, of a child. The loss of life among children of tender age in Dublin is and has been for many years appalling. The facts of the case have recently been laid before our readers in papers by two most competent authorities—Dr. Grimshaw, the Registrar-General for Ireland,[a] and Sir Charles A. Cameron, Chief Medical Officer of Health for Dublin.[b] It is deplorable, but true, that among the poor, grief often repeated loses its poignancy, and a child's death is at last regarded as a mere matter-of-fact occurrence. But, after all, what is the value of a child's life? Immeasurable to the parents, to the community, to the State. The poet Longfellow—the poet of children—beautifully expressed this truth in his poem, "To a Child," when he wrote—

> "O child! O new-born denizen
> Of life's great city! On thy head
> The glory of the morn is shed,
> Like a celestial benison!
> Here at the portal thou dost stand,
> And with thy little hand
> Thou openest the mysterious gate
> Into the Future's undiscovered land."

Truly, Preventive Medicine will have won a triumph more glorious than that of a hundred victories on the battle-field, when it will have taught us how best to contend against the myriad dangers which encompass the fragile life of children among the destitute in the slums and alleys of our great cities. As Dr. Grimshaw well puts it in his paper—"It is necessary not merely to save the lives of little children, but to secure that those who do survive the dangers of infancy and early childhood may have a fair chance of growing up into healthy men and women, sound in body. mind, and soul, both good and useful, and capable of fulfilling the duties for which Providence intended them."

There are many signs and tokens that philanthropy on the one hand and medical science on the other are awakening to the importance of the issue at stake. The National Society for the Prevention of Cruelty to Children has undertaken and is achieving a noble task in striving to cause the martyrdom of childhood to cease. That the Medical Profession is alive to the significance of this crisis in the world's history, the books which lie before us bear witness. It

[a] Dublin Journal of Medical Science. Vol. LXXXVIII., page 1. No. 211. Third Series. July, 1889.

[b] *Loc. cit.* Page 208. No. 213. Third Series. September, 1889.

is, however, to vital statistics, first raised to the dignity of a science by William Farr, that we owe the beginnings of a great reform—the object and scope of which are to lay a foundation of health, strength, and vitality in early youth.

The year 1889 will be notable in the history of medical literature as that in which two great works on the diseases of children, written in English, have appeared in the Old and New Worlds respectively. The works are essentially different—one being a cyclopædia, the other a treatise. Both—we make bold to say—are of the highest value and interest. In addition to these the New Sydenham Society has enriched the literature of Children's Disease by an English version of Dr. Henoch's classical German treatise on this subject. We propose to draw attention to a few of the distinguishing features of the three works.

1. The "Cyclopædia of the Diseases of Children" consists of a collection of monographs—not mere dictionary articles—arranged in the form of a systematic treatise, and devoted to the consideration of the anatomy, physiology, medicine, surgery and hygiene of infancy, childhood, puberty, and adolescence. Each writer is alone responsible for his statements, and has been left at liberty to deal with his subject from whatever standpoint he thinks best. This, naturally, has led to considerable variety in the style and arrangement of the different articles. The work, when complete, will form four handsome imperial octavo volumes of nearly 1,000 pages each. Each volume will be fully indexed, and the final volume will contain a general index to the entire work. The majority of the contributors are American authors, but the names of eight well-known British writers appear in the table of contents of the first volume. Thus, Dr. Angel Money contributes an article on the "Physiology of Infancy;" Dr. James Finlayson, one on "Diagnosis;" Miss Catherine Wood, of the Great Ormond-street (London) Hospital for Children, one on the "Nursing of Sick Children;" Dr. Thomas More Madden, of our own city, one on "Puberty: its Pathology and Hygiene;" Dr. William Pasteur, one on "Fever in General;" Dr. Alexander Collie, one on "Typhus;" Dr. T. M. Dolan, one on "Pertussis;" and Dr. W. B. Cheadle, one on "Rheumatism." The first two volumes have already been published, and we understand that the third and fourth are nearly ready.

Volume I. opens with an introduction from the pen of Dr. A. Jacobi, the well-known Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, New York. He points

out that "with more pertinacity than logic, pediatrics (comprehending the anatomy, physiology, pathology, and therapeutics of infancy and childhood) has also been claimed as a speciality. This is a mistake, however, which has been made more frequently on the Continent of Europe than with us (*i.e.*, in America). It is there that practitioners and authors advertise themselves for reasons of their own, which would not be approved of here, as 'children's physicians' and 'specialists.' Pediatrics, however, is no speciality in the common acceptation of the term. It does not deal with an organ, but with the entire organism at the very period which presents the most interesting features to the student of biology and medicine. Infancy and childhood are the links between conception and death, between the fœtus and the adult. . . . The history of pediatrics, therefore, is as old as that of medicine."

Exclusive of the introduction, the volume is divided into two parts—the first, devoted to general subjects; the second, to the consideration of fevers and miasmatic diseases. Under the latter heading, at the close of the volume, we were surprised to come across monographs on "Joined Twins," "Embryology," and the "General Therapeutics of Children's Diseases." On looking into the matter we found the explanation of this anomaly to be that the manuscript of the two former articles was received too late for them to appear in the place originally assigned to them. No explanation is vouchsafed as to the misplacement of Dr. Roberts Bartholow's Essay on the Therapeutics of Children's Disease, which certainly should have taken its place in Part I. of the volume among such kindred topics as infant-feeding, weaning, diet after weaning, nursing of sick children, and nursery hygiene.

After Dr. Jacobi's "Introduction" follows Part I. on "General Subjects." Chapters on the "Anatomy of Children" (by Dr. George M'Clellan) and the "Physiology of Infancy" (by Dr. Angel Money) are succeeded by an excellent monograph on "Diagnosis," by Dr. James Finlayson, of Glasgow. It opens with a graphic description of the many difficulties which beset the physician in his physical examination of a very young child. Then follows a scathing denunciation of the doctrine that "Teething" is the *fons et origo* of all "the ills that (infant) human flesh is heir to." The popularity of this doctrine, whereby diagnosis is made easy, depends—as Dr. Finlayson remarks—partly on its saving a world of trouble to the doctor, but also on its meeting the view of the parents, who like to have all things "explained." "A 'tooth-

rash' is a splendid safety-valve." "A diarrhœa due to a wrong style of feeding is a slur on their (parents' and nurses') character and discretion; a diarrhœa from teething is what might be called (as in the marine insurance policies) 'the act of God.'" We have nothing but commendation for Dr. Finlayson's advice on the subject of how to examine sick children. "In proceeding with the examination," he says, "the guiding principle is to avoid sudden or abrupt methods; preliminary manœuvres, and even a little playfulness, often help to establish friendly relationships which facilitate the work, but no definite rules can be given. The patience and good temper of the physician must be inexhaustible, and when these are combined with a genuine desire to benefit the child, and a *bonâ fide* love of little children, there are no limits to what may be done. Here, as in many other things—

"'It is the heart, and not the brain
That to the highest doth attain.'"

The succeeding sections, or chapters—on the Influence of Race and Nationality upon Disease, by Dr. J. Wellington Byers; Outlines of Practical Bacteriology, by Dr. Edward O. Shakespeare; Maternal Impressions, by Dr. William C. Dabney; and Diseases of the Fœtus, by Dr. Barton Cooke Hirst—conclude what may be called the introductory portion of this great work. These chapters are all well written, and Dr. Shakespeare's monograph on Bacteriology is profusely illustrated with both woodcuts and photographic plates.

In a chapter on Wet-Nurses, Dr. William H. Parish makes the startling statement that to say that only mothers of legitimate children should be accepted would be almost equivalent to rendering the attainment of a wet-nurse an impossibility in the United States.

One of the most attractive articles in the first volume is certainly that on the Nursing of Sick Children, by Miss Catherine Wood, whose name we have already mentioned. Her excellent article ends with these words:—"There can be no doubt that it is very hard work to nurse a sick child; but there also can be no doubt that the hard work amply repays itself in its results." No one but a woman and an experienced and sympathetic nurse could have written thus. We make no apology for quoting the following sentences:—

"It is very touching when among sick children to see the quiet and contented way in which they lie in their cots, thankful to be only let

alone; and it is this letting alone which is so important in nursing a sick child. The less the child is handled the better. . . . It is most essential in the care of sick children that they should be supplied with plenty of light and fresh air, in neither case pouring in directly on them, but flooding them all round in generous profusion. They by no means appreciate the darkened room and hushed voice: like the plants in the garden, they expand under the rays of light; and there can be no doubt that the light has a physiological influence on their growth and development, especially so in the case of illness. Therefore, in arranging the sick room, let it have as much of the light as possible, a southern or western aspect, and a free circulation of air through it, by maintaining an interchange with the outer air without making a draught; and this should be kept up by night as well as by day, especially in crowded cities. Of course in certain fever cases, in acute diseases of the brain or diseases of the eye, a darkened room may be required" (page 349).

The first part of the first volume concludes with a memoir on "Puberty: its Pathology and Hygiene," from the flowing pen of our countryman, Dr. T. More Madden.

Part II. is devoted to the subject of Fevers and Miasmatic Diseases. It begins with a good article on Fever in general, which is well up to date, and contains a summary of Dr. Donald MacAlister's views on pyrexia. It is worth noting that the writer's name is "Pasteur"—Dr. William Pasteur, F.R.C.P., Physician to the North-Eastern Hospital for Children, London. The article ends with a short account of simple continued fever and of thermic fever. We cannot agree with the author in grouping under the heading of "Simple Fevers," abortive or incomplete forms of the specific continued fevers—typhus, typhoid, and relapsing fever, as well as cases of scarlet fever, modified variola, and more rarely measles and erysipelas, in which the eruption is either absent or unnoticed; and, lastly, in rare instances, anomalous forms of intermittent fevers. Now, to our mind, these abortive or incomplete forms of the different specific fevers should on no account be regarded as simple fevers—this is exactly what they are *not*. Such a classification defeats the chief object with which it is made—that of simplifying the study of disease. The author says that "the prognosis is always favorable." This is quite true, if we exclude from the definition of simple continued fever, or febricula, aberrant forms of typhoid fever, scarlatina, or erysipelas. It is the converse of true, if we consider these too often treacherous attacks from the standpoint of clinical medicine. Fortunately,

Dr. Pasteur adds that "it must be borne in mind that what appears to be simple fever at the outset may prove to be some severe or highly infectious disease." This is exactly why we object when he proposes to classify such a disease as simple fever—it is merely a wrong diagnosis, not a classification.

Dr. J. C. Wilson, Physician to the Philadelphia Hospital, contributes an article on Enteric or Typhoid Fever. It is in many ways an excellent monograph on this form of fever, and in an Encyclopædia or Dictionary of Medicine would fitly find a place. In the present work, we think it would have been better to have condensed the paragraphs on ætiology and pathology, remembering with the author that "the course of enteric fever in childhood is not only, as a rule, much lighter, but it also lacks the well-marked sequence of phenomena which characterise the evolution of the sickness in the later periods of life." Dr. Wilson is rather inclined to be dogmatic in some of his statements—for example, when he says that *taches bleuâtres* "do not occur in children;" and again, that "bedsores do not occur in childhood, except as the result of inefficient nursing." We have certainly seen taches bleuâtres in children of eight to ten years of age, while one of the most awful instances of bedsores with which we have ever met occurred in a very young girl, who was most carefully and tenderly nursed through her fever. No doubt, these were exceptional cases. We have nothing but praise for the way in which Dr. Wilson discusses the subject of treatment of typhoid fever. His advice is sound, and he proves himself to be a man of vast practical experience and of almost infinite resource.

Dr. Alexander Collie contributes the article on Typhus. It is defaced by the insertion at the close of every third or fourth paragraph of the words "Collie 'On Fevers,'" within brackets. The author's definition of "Typhus" is sadly defective—"An acute infectious disease, characterised by an eruption on the skin of ill-defined, brownish-red spots." A protest must also be entered against giving children (who are defined as being "ten and under") castor-oil after Veitch's method. This "excellent method of administering it" is thus described:—"Put a teaspoonful of brandy into a glass, and wet the sides well with it, then pour very slowly the oil on to it, taking care to keep it so directly in the middle of the glass, that none shall touch the sides; on the top of the oil put another teaspoonful of brandy. Before the patient takes it, give him a little brandy with which thoroughly to rinse his mouth, that the oil if it touches

should not stick to it. If he then opens his mouth wide and swallows the oil boldly, taking another sip of brandy immediately after it, he will not taste it." We fear Dr. Collie has forgotten the age of his patient, and the disease through which he is passing.

Dr. Collie's article is followed by a very sketchy description of Relapsing Fever, by Dr. Roland G. Curtin, Visiting Physician to the Philadelphia Hospital. In the section on Treatment, the author seems almost to have forgotten that he is writing about sick *children*. He recommends such remedies as mercurial pill, ice to the head, leeching, dry or wet-cupping, blistering (which, he says, "is better than taking blood for the weak and anæmic"), opium and morphin, heart tonics "along with alcohol, carbonate of ammonium, and other stimulants, besides turpentine stupes, stimulating frictions, and dry-cupping over heart and lungs." During convalescence, we are to caution the *patient* and nurse as to the importance of absolute rest, "as there is often great danger of heart-failure if this injunction is unheeded." Dr. Curtin's youthful patients must be rather precocious.

The next article is a classical treatise on Cerebro-spinal Fever, from the pen of a well-known writer on Diseases of Children—Dr. J. Lewis Smith, Clinical Professor of Diseases of Children in the Bellevue Hospital Medical College, New York. It runs to more than 40 pages, and will repay a close study. At page 530 there is a graphic illustration of the *decubitus* in the opisthotonos and muscular rigidity of this terrible disease.

Dr. Samuel C. Busey contributes an excellent article on "Scarlatina." Although he observes, in a footnote on page 559, that the rarity of this disease under two years is denied by some, we can fully corroborate his statement that the susceptibility to the poison of scarlatina is not very marked during the first year of life. So impressed have we been in practice by this fact that we have allowed a nursing mother, the subject of scarlatina, to continue to suckle her babe if she desires to do so, and if the secretion of milk is maintained. We take exception to Dr. Busey's assertion that "in other instances, far more numerous than those of brief incubation, the disease has been delayed for several weeks." Such an assertion can have the effect only of darkening knowledge. The author himself evidently hesitates to adopt this doctrine of an indefinite incubation stage in scarlatina, for he adds—"In many of the cases of delayed incubation it may be that a second or a third exposure has occurred, and the period of incubation in such

cases would date from the last [exposure]." Dr. Busey dismisses the theory of *psorenterie* with the words—"Some have contended that the gastro-intestinal mucous membrane is inflamed and subjected to an exfoliation of epithelial cells."

One of the most admirable monographs in this first volume of the Cyclopædia is that on Diphtheria by Dr. J. Lewis Smith, whose treatise on Cerebro-spinal Fever we have already noticed with approval. It is a masterly article, based on a happy combination of wide-spread personal experience and extensive literary research. Perhaps the most interesting section of this contribution is that on Diphtheritic Paralysis, in which mention is made of a remarkable series of fatal cases of cardiac paralysis observed in the practice of M. Cadet de Gassicourt. A very similar case to those quoted recently came under our own observation. A little boy aged four years had passed through a prolonged attack of diphtheria with albuminuria. A train of paralytic symptoms followed. The voice became nasal. The velum palati was relaxed and motionless. There was considerable dysphagia. Suddenly, the child became subject to frightful attacks of cardiac failure. He would waken from sleep screaming, with rapid, almost imperceptible, pulse, quick breathing, deadly coldness of the extremities. In some of these attacks death seemed imminent, but was happily warded off by the application of warmth externally and the administration of stimulants. On several occasions tablets of nitro-glycerine gave almost instantaneous relief. The attacks resembled angina pectoris—a fact which is not alluded to by Dr. Smith, nor does he suggest the nitrites as suitable remedies—and such they undoubtedly are—in this most dangerous complication.

As to the cause of sudden heart-failure in diphtheria, Dr. Smith sets aside the supposed influence of endocarditis and of cardiac thrombosis. He admits that weakening of the heart's action in diphtheria, with sudden death as a consequence, has with more probability been attributed to granulo-fatty degeneration in the muscular fibres of the heart consequent upon a prolonged and severe diphtheritic attack; but he expresses the opinion that the theory of deficient innervation or a true cardiac paralysis appears most tenable under the circumstances.

The section on Treatment is very full. Dr. Smith says that, from what is now known of the action of chlorate of potassium, it would probably be better to abandon its use in diphtheria, since it is a remedy of doubtful efficacy for throat-affections. He speaks

highly of corrosive sublimate and turpentine as remedies in diphtheria, the use of these drugs being based on the theory of the microbic origin of the disease. In his practice excellent results have apparently followed the local use of corrosive sublimate by the atomiser. The solution which he has employed consists of two grains of the sublimate to one pint of water, and in spraying the fauces the bulb of the atomiser is compressed from three to five times. In ordinary cases the spray is used every second hour. Turpentine is given internally in large doses—a teaspoonful mixed with spirit of ether (ether, one part; alcohol, three parts) thrice daily. Dr. Smith from experience confidently recommends the inhalation of turpentine vapour. Two tablespoonfuls of a mixture containing an ounce of carbolic acid, an ounce of oil of eucalyptus, and eight ounces of spirit of turpentine, are mixed with a quart of water. This is placed in a shallow vessel or vessels with a broad surface, and maintained in a constant ebullition or simmering, upon a gas or other stove. The vapour, which is not unpleasant, acts as a disinfectant, locally to the patient's throat, and generally to the sick-room and house. Notwithstanding the high recommendation of pilocarpin as a remedy by Lax, Guttmann, Gelsner, and Delewsky, Dr. Smith regards its use as hazardous, especially in young and feeble children. He lauds strychnin as the most efficacious nerve-stimulant in the various forms of diphtheritic paralysis, and especially by hypodermic injection in cardio-pulmonary paralysis.

We experience something of the nature of a reaction in passing from Dr. Lewis Smith's masterly treatise on Diphtheria to the succeeding article on Measles. The account of this disease is sketchy in the extreme. Under the heading "Etiology" no reference is made to the curious observations of Salisbury, of Newark, Ohio, and of the late Henry Kennedy, of Dublin, as to the origin of a disease closely resembling measles from the inhalation of certain musts or moulds. The stage of incubation is said to vary from 7 to 21 days, and there is no allusion to the eminently typical ranges of temperature in ordinary measles. The author, in discussing treatment, says that "in case the temperature rises above 103° F. it is controlled by antipyrin, 10 grains in a teaspoonful of warm water, injected per rectum and repeated every hour until it is reduced." We venture to assert that such active treatment is never called for in ordinary measles, and in the case of young children would be positively dangerous. In our experience

young children bear antipyrin badly, and collapse-symptoms have followed even a 5-grain dose in a child aged five.

Dr. William A. Edwards gives a very full and accurate account of Rötheln, or—as he prefers to call it—Rubella. Dr. A. D. Blackader contributes an excellent article on Smallpox under the heading "Variola." These sections are separated from each other by an able article on "Pertussis" by Dr. T. M. Dolan, of Halifax, England, which is certainly misplaced. It and Dr. Rex's account of Parotitis should follow Dr. Hirschfelder's description of Erysipelas, the last of the eruptive fevers which is discussed. In his interesting history of Vaccination (pages 743, *et seq.*), Dr. W. T. Plant omits to mention that Edward Jenner was not the first person who performed vaccination. If he will refer to the second volume of the *Lancet* for 1862 (page 260), he will find that twenty-two years before Jenner vaccinated the lad James Phipps on May 14, 1796, the operation had been performed by Benjamin Jesty, a Gloucestershire farmer. In 1774 that worthy vaccinated his wife and two sons.

Varicella is well discussed by Dr. Charles G. Jennings, Professor of the Diseases of Children in the Detroit Medical College.

Dr. Hirschfelder's account of Erysipelas is thoroughly well written and up to date. More than once he mentions the lungs as being a seat of the disease, confirming our own conviction that there is certainly a pneumonia which is nothing more or less than erysipelas—that, in fact, the generic term pneumonia is loosely applied to several perfectly distinct diseases, such as erysipelas, pneumonic fever, typhoid fever with local determination to the lungs, besides hæmorrhagic infarction, hypostatic congestion, and pulmonary œdema. Some years ago an elderly man was admitted into hospital under our care, suffering from a supposed attack of acute pneumonia. The temperature did not fall on the critical seventh day, and a cutaneous erysipelas showed itself between the shoulders, whence the dermatitis spread downwards to the nates, the lung trouble meanwhile clearing off. Dr. Hirschfelder describes the physical signs of erysipelatous pneumonia as being—slight dulness, with subcrepitant rather than crepitant râles, changing their seat from day to day as the lesion spreads rapidly from one portion of the lung to another. In such cases he says that both Strauss and Denuce found no fibrinous exudation in the alveoli, but instead leucocytes and granular cells. The lymph-glands supplied by the affected region quickly swell, and are very painful. And this

reminds us that erysipelas of the throat is the most painful of all the forms of sore throat. At page 777 there is a graphic description of the insidious onset and tragic course of erysipelas of the newly-born.

"Fevers" are succeeded by "Miasmatic Diseases," of which no definition is given. This part of the work includes an important monograph on Rheumatism, by Dr. W. B. Cheadle, Senior Physician to the Hospital for Children, Great Ormond-street, London. It is illustrated by novel drawings of rheumatic nodules and a table from the Report of the Collective Investigation Committee giving the relative results of different forms of treatment. Dr. Cheadle is an accepted authority on Rheumatism in Childhood, since he selected as the subject of the Harveian Lectures for 1888 the various manifestations of the Rheumatic State as exemplified in Childhood and Early Life.

The other miasmatic diseases which are discussed are Malaria, by Dr. Forchheimer, of Cincinnati, Ohio; Yellow Fever, by Dr. John Guitéras, of Charleston, South Carolina, who remarks that this is the first time that a chapter in a treatise on the diseases of children has been devoted to yellow fever, and yet no disease is more deserving to be so classed; and Dengue, by Dr. Rudolph Matas, of New Orleans. The last-named article is written in somewhat stilted Latinised English, which detracts from its merits. "Cholera Infectiosa," by Dr. E. O. Shakespeare, of Philadelphia, concludes this portion of the work. The section on the Treatment of Cholera contains an account of the methods of *enteroclysis* and *hypodermoclysis* practised with much success by Professor Cantani, of Naples, and other Italian physicians during the recent cholera epidemic in that country. Tannic acid is the chief active ingredient in the enemata used in enteroclysis. The fluid used by Cantani for hypodermoclysis contains in two litres ($3\frac{1}{2}$ pints) of boiled water, 80 grammes (nearly 3 ounces) of pure chloride of sodium, and 6 grammes ($92\frac{1}{2}$ grains) of sodium carbonate.

The misplaced articles, to which allusion has already been made, bring this first volume of the Cyclopædia to a close. Dr. Jaggard's brochure on "Joined Twins" is profusely illustrated by a series of twenty-four instructive but somewhat repulsive figures showing different forms of double monsters.

The second volume of this great work is divided into five parts, in which the subjects respectively treated are—diseases of the

skin; constitutional diseases and diseases of nutrition; diseases of the respiratory tract; diseases of the circulatory, hæmatopoietic, and glandular systems; and diseases of the mouth, tongue, and jaws.

It is a matter for regret that, in the first part, Dr. James Nevins Hyde, or Dr. L. Duncan Bulkley, or some of the other competent writers whose names head the sections, did not supply an introductory chapter on Skin Diseases in Children. Dr. Hyde, who "opens the ball," plunges at once *in medias res* with an account of seborrhœa, under the caption "Disorders of the Glands." This author is unfortunate in his derivation of the words anhidrosis and hyperhidrosis (or, as he spells them, anidrosis and hyperidrosis), from ὕδωρ, *water*. Of course, the root in both cases is ἱδρώς, *sweat*. Space fails us to dwell on this part of the work. We must, however, take exception to the dogmatic way in which Dr. Arthur Van Harlingen asserts of eczema that "it is *never contagious*." The italics are in the original. We have long taught that the words "never" and "always" find no place in Practical Medicine—much less when they are italicised. Eczema as a rule is non-contagious, but that it is occasionally transmitted from person to person by contact we have undoubted proof. It is true that in such cases the eczema is usually of the purulent or suppurative variety—eczema impetiginodes. It is within our knowledge that a physician and a nurse have contracted this disease from patients upon whom they were in attendance.

The recent date at which this second volume of the Cyclopædia has reached us forbids a detailed analysis or criticism of its contents. In Part II., on Constitutional Diseases and Diseases of Nutrition, there are very able articles by Dr. Henry Ashby, of Manchester, on Scrofulosis; Dr. A. Jacobi, of New York, on Tuberculosis; Drs. Thomas Barlow and Judson S. Bury—a physician and surgeon thus writing conjointly—on Rachitis; and the late much lamented Dr. J. Milner Fothergill, on the Urinary Diatheses. The Editor, in a sympathetic note, observes that the manuscript of Dr. Fothergill's article was received a few days after the cable announced his death. It was the last work of this distinguished writer.

In Part III., on Diseases of the Respiratory Tract, Dr. Charles E. Sajous, of the Jefferson Medical College, and well known also as the indefatigable editor of the *Annual of the Universal Medical Sciences*, writes on Laryngeal Stenosis; Sir Morell Mackenzie on

"Tumours" of the Larynx; Dr. William P. Northrup, of New York, on Intubation. Among the writers on Diseases of the Lungs are Dr. Francis Minot, Hersey Professor of Physic in Harvard University; Dr. Frederick C. Shattuck, Jackson Professor of Clinical Medicine in the same University; and Dr. A. Jacobi, of New York.

To Part IV. the list of contributors is, if possible, more renowned. It includes the names of Drs. J. M. Da Costa, of Jefferson Medical College, Philadelphia; William Osler, Professor of Medicine, John Hopkins University, Baltimore; W. B. Cheadle, J. Mitchell Bruce, Arthur Ernest Sansom—all of London; and S. Ashhurst, Surgeon to the Children's Hospital, Philadelphia.

Our dental friends will be specially interested in Part V., to which Dr. Edwin T. Darby, Professor of Operative Dentistry and Dental Histology in the University of Pennsylvania, contributes a special article on the Diseases and Care of the Teeth. Here, too, will be found a monograph on Diseases of the Mouth, by Dr. W. W. Allchin, of the Westminster Hospital, London; an account of Hare-lip and Cleft Palate, by Dr. J. Ford Thompson, Professor of Surgery in the National Medical College, Columbia University; and one of Injuries and Diseases of the Jaws, by Dr. J. Ewing Mears, Lecturer on Practical Surgery, Jefferson Medical College.

The illustrations in this volume are very numerous. They embrace a remarkable series of plates, drawn by Mr. Collings, representing the histological, normal, and diseased appearances of the myocardium. A figure facing page 978, showing a section through the line of advance of noma affecting a child's cheek, is deprived of its value through the omission of the explanatory letters referred to in the accompanying letterpress descriptive of the plate.

Enough has been said in the foregoing pages to convey an impression of the high opinion we have formed of the merit of this cosmopolitan work, so skilfully and judiciously edited by Dr. John Keating.

2. The next book on our list is in its way quite as valuable as the Cyclopædia we have been discussing. Written conjointly by a physician and by a surgeon, both possessing a ripe experience in children's diseases, it bespeaks attention as presenting a complete account of the morbid conditions met with in the critical life-periods of infancy and childhood. Nor does a closer acquaintance with the work belie the favourable anticipations we formed of it at first sight.

Based on a ten-years' experience at the General Hospital for Sick Children, Manchester—an institution at which some 1,200 in-patients and some 10,000 out-patients are treated every year—the book is written from a practical stand-point and includes but little pathological detail. Both the authors are known to fame. We have already alluded to Dr. Henry Ashby's excellent article on Scrofulosis in the Cyclopædia of the Diseases of Children. In the third volume of that work we are promised a further contribution from him on the subject of "Peritonitis." Mr. G. A. Wright, his colleague at the Children's Hospital, Manchester, has recently published a treatise on "Hip Disease in Children."

The work consists of thirty-nine chapters, an appendix, and an index. It opens with a very good epitome of the physiology of infancy and childhood, which is followed by an interesting account of the diseases incident to birth and the hygiene and diet of infants and children. In Chapter IV. a consideration of the diseases of the digestive system is introduced, beginning with a section on the influence of dentition upon the health of the infant. Chapter X. is devoted to diseases of the liver. It is followed by three chapters on diseases of the respiratory apparatus, after which come two chapters—curiously out of place—on the specific fevers. This important subject is introduced by a general section on "Feverishness," in which we meet with an instance of the authors' powers of observation, which is worth quoting. "In some feverish attacks," they observe, "we have noticed an enlargement of the cervical glands on the upper part of the sterno-mastoid, without any appearances of irritation in the tonsil or pharynx; possibly there may be such a disease as an acute idiopathic adenitis, or some poison may, perhaps, be absorbed from the pharynx and enter the glands without setting up any local lesion at the absorbent surface." (Page 211). With this latter view we thoroughly agree.

The remaining topics discussed are—diseases of the circulatory system, general diseases, diseases of the nervous system, of the genito-urinary system, of the bones and joints, of the nose, ear, thyroid and thymus, of the skin—besides special articles or chapters on hip disease, club-foot, and deformities of the limbs, tumour-growth in childhood, injuries, shock, hæmorrhage, &c. The last chapter (XXXIX.), on anæsthetics for children, is written by Mr. Alexander Wilson, administrator of anæsthetics to the Manchester Royal Infirmary. He recommends local anæsthesia, produced by holding a piece of ice dipped in salt against the surface, or by the ether

spray, for exploratory punctures. He cannot recommend cocaïn or chloroform. For minor operations nitrous oxide gas is well borne by children, and by giving a little ether along with it anæsthesia is prolonged. Ether has many advantages, and is safe, but hard to take. The A. C. E. mixture is not so depressing as chloroform, and so is safer, but not as safe as ether. The directions for giving anæsthetics to children are sound and practical.

The appendix is devoted to food and therapeutics. It contains much information and many valuable suggestions.

The style in which this book is written is attractive. It is printed in clear type and on well-made paper. The illustrations are numerous, original, and true to nature. There are a few blemishes and inelegancies, such as the expressions "the cavity *granulates up*" on page 28, and "none of these remedies have" on page 32. But these and similar faults are few and far between, so that our verdict is that Dr. Ashby and Mr. Wright have enriched the literature of Diseases of Children with a well-written, practical, and valuable treatise.

3. Dr. Henoch's name has long been familiar to us as that of a leading authority upon the diseases of children, and we therefore welcome an English translation of his lectures.

This book is the outcome of forty-five years of untiring clinical work by a skilled observer, and the clinical descriptions and the directions for treatment are based solely upon the author's wide experience.

After a short introduction upon the methods of examining sick children, we find the text divided into five Sections.

Section I. is on the "Diseases of New-born Infants"—*e.g.*, icterus, sclerema, erysipelas, melæna neonatorum, trismus, hæmatoma, &c.

Section II. deals with the "Diseases of Infancy," such as infantile atrophy (athrepsia), hereditary syphilis, dyspepsia, and dentition.

Section III., on "Diseases of the Nervous System," occupies the largest space, and Sections IV. and V. treat, respectively, of the diseases of the respiratory and circulatory organs.

Some affections which are not often met with in childhood are passed over—*e.g.*, variola, and the important topic of vaccination is omitted simply because Dr. Henoch felt himself unable to add, from his personal observation, anything material to the bulky literature already in existence upon the subject.

The fact that four editions of Henoch's book have been demanded

within eight years speaks for itself, and we can confidently recommend it to our readers as a work which is excellently adapted to the requirements of daily practice.

Watts' Dictionary of Chemistry. Revised and entirely re-written by M. PATTISON MUIR, M.A., Fellow and Prælector in Chemistry of Gonville and Caius College, Cambridge; and H. FORSTER MORLEY, M.A., D.Sc., Fellow of University College, London, and Professor of Chemistry at Queen's College, London. Assisted by eminent Contributors. In Four Volumes. Vol. II. London: Longmans, Green, & Co., and New York. 1889. 8vo. Pp. 760.

IN the number of this Journal for June, 1888 [Vol. LXXXV., page 501], will be found a review of the first volume of this masterly revision of "Watts' Dictionary of Chemistry." The present volume is the second of the series of four volumes into which the revised work will be divided. We observe that the names of the editors or revisers have changed places on the title-page—Mr. Pattison Muir now taking precedence of Dr. Forster Morley. In an Introduction to the articles relating to organic chemistry, Dr. Morley points out that in this volume the nomenclature is the same as that adopted in its predecessor—namely, that which is used in the *Journal of the Chemical Society*. Unsigned articles are from the pen of this erudite chemist; articles by Mr. Muir are initialed "M. M. P. M." A slip, specially bound in at the front of the list of contributors, informs us that the article on "Chlorophyll" is by Dr. Edward Schunck, F.R.S., and a very interesting article it is. We are disappointed that the name of not even one Irish chemist appears in the list of contributors.

"Chenocholic Acid" forms the subject of the first article, and "Indigo" that of the last article in this volume. Among the special articles we notice those on "Crystallisation," by Mr. Harry Baker; "Combustion and Flame," by Professor T. E. Thorpe; "Dissociation and Explosion," by Professor R. Threlfall, of the University of Sydney: "Fermentation," by Dr. Samuel Rideal; "Elements," by Mr. F. Wigglesworth Clarke, Chief Chemist of the United States Geological Survey; "Relative Densities," by Miss Ida Freund, Lecturer in Chemistry at Newnham College, Cambridge; "Indigo," by Mr. Arthur G. Green, F.I.C.; "Laws of Chemical Combination," by Mr. Muir. Medical readers will be specially interested in such articles as those on "Cinchona Bark,"

by Mr. David Howard; "Chloral," by Dr. Morley; "Cholesterin," by Dr. George M'Gowan, and a host of others.

The spelling is generally good, but we are surprised to find "Creosote" adopted as the spelling of "Creasote"—the explanation seems to be that the authorities quoted in the article on Creasote are mainly German, and the word is spelled "Kreosot" in their language. Of course either form is correct, if regard is had to the derivation alone—namely, *κρέας*, *σώζειν*.

We have again to express our sense of the scientific value of this great work, and we wish the authors equal success in the completion of their labours to that which has so far crowned their efforts.

Congrès pour l'Étude de la Tuberculose chez l'Homme et chez les Animaux. Première Session, 1888. Comptes rendus et mémoires publiés sous la Direction de M. le Dr. L.-H. Petit, Secrétaire-général. Paris: G. Masson, Editeur. 1889. 8vo. Pp. 760.

Transactions of the Congress held in Paris for the Study of Tuberculosis in Man and Animals. First Session, 1888. Edited by Dr. L. H. Petit, General Secretary. Paris: G. Masson. 1889.

We have before us the Transactions of the above-mentioned Congress, forming a bulky volume of 760 closely printed pages.

The idea of holding this Congress originated with several veterinary surgeons and medical men—invitations to attend its sittings were sent to many different countries. It was held in July, 1888, and was attended by a large number of doctors and veterinary surgeons, chiefly French, but including also some from Great Britain, Belgium, Spain, the United States, and several other countries. M. Chauveau was elected President.

The first subject discussed was the danger to human beings arising from the milk and meat of tuberculous cattle, and the best means of avoiding such danger. With regard to milk there was no difference of opinion—tubercle bacilli are found in the milk of cows affected with tubercular disease of the udder. This disease is not uncommon (M. Bang, Copenhagen, met with seven cases in seven months), and is often obscure. Therefore all milk should be looked upon with suspicion, and should never be used for food without having first been boiled.

M. Thomassen, Utrecht, stated that in Holland dairies are inspected by a veterinary surgeon, and the cows are examined once or twice a week.

With regard to the question whether it was dangerous to use as food the flesh of tuberculous animals, there was some difference of opinion. M. E. Nocard described a number of experiments he had made by injecting the juice of such meat into the peritoneal cavity of guinea-pigs, and by feeding young cats with the meat. One of his guinea-pigs became affected with tuberculosis; all the other animals experimented on remained perfectly healthy. Hence, M. Nocard concludes that the meat of tuberculous cattle is dangerous only under very exceptional circumstances, and even then only in a very slight degree.

On the other hand, M. Arloing considered that this meat was dangerous to a considerable extent. He mentioned that out of 45 guinea-pigs inoculated with the juice of such meat, seven had become tuberculous, and he strongly urged the necessity of the total prohibition of the sale of any portion of the meat of tuberculous cattle.

The general opinion of the Congress on these questions appears to have been, that the whole carcase of every tuberculous beast should be seized, and no portion allowed to be sold for food, and that authority should be given to sanitary officers to inspect public dairies, and seize any tuberculous cows that might be found.

M. Moulé showed that fowl are not infrequently attacked by tuberculosis. In them the abdominal organs are much more frequently the seat of disease than the thoracic. In 38 tuberculous fowl the liver was diseased in 20 cases, the intestine in 20, and the lungs only in 6. He called attention to the danger of eating the insufficently cooked liver of fowl, and mentioned a case in which small, white, tuberculous spots in some livers, which on examination he found swarming with bacilli, had been mistaken for a fatty change; the livers consequently were considered an unusual delicacy, and eaten in a semi-cooked condition, forming a dish which M. Moulé calls a "Purée de bacilles."

After several papers on tubercular disease in Chili, Asia Minor, and some other countries, Professor Lannelongue described three cases in children in which there had been extensive tuberculous infiltration of the liver (caseous hepatitis), and cavernous ulcerations (parenchymatous abscess). We will briefly describe one of these cases :—

"A little girl, aged four years, Marie L., whose health had previously been good, began about the end of January, 1888, to grow thin and pale, and suffered from cough, rigors, pyrexia, and vomiting. After these

symptoms had lasted three months, she came under Professor Lannelongue's observation. Her abdomen was then found to be swollen and tense in the epigastrium; a little to the right of the middle line a tumour projected, which was rounded, dull on percussion, of the size of an orange, and moderately tense. The dulness merged into that of the liver, which organ was somewhat enlarged. The diagnosis was made of a tuberculous abscess on the upper surface of the liver. The abscess was opened, its cavity was found to extend outwards towards the axillary line, and to be bounded below by the upper surface of the liver. There did not appear to be any disease of, or opening into, the substance of the liver. The child died the day after the operation. At the *post-mortem* examination the liver was found firmly adherent to the abdominal walls and diaphragm; its upper surface presented two greyish prominences, the larger of which corresponded to the site of the abscess sac; incisions showed that these prominences were caused by two very large abscesses in the substance of the liver full of greenish and partly cheesy pus. The glands in the portal fissure were each as large as a nut—some were cheesy or suppurating; there were two small caseous tubercles in the apex of the right lung."

The other two cases were very similar. All the children died soon after the abscesses were opened.

M. Lannelongue does not appear to have made any examination to establish the presence of the tubercle bacillus; but concludes the abscesses were tuberculous from the nature of their contents, and from the character of their walls. Such cases appear to be very rare.

Professor Cornil described some experiments he had made to investigate how rapidly the ingestion of tubercle bacilli by the mouth leads to tubercular disease of the abdominal organs. Guinea-pigs were given a few drops of a cultivation of bacilli mixed with their food, and after varying periods of time were killed, and their viscera examined. Between ten and fifteen days after the bacilli had been swallowed, the solitary glands and Peyer's patches were found swollen, and by the fifteenth day there were tubercles visible by the naked eye. But in the mesenteric glands traces of disease were found even earlier, accumulations of cells with bacilli being seen on the fourth day, and fully formed tubercles on the sixth. He found also that the introduction of a few drops of a cultivation into the vagina of guinea-pigs was followed in a few days by a catarrh of the cervix of the uterus, and by the fifteenth day microscopic tubercles were seen in the mucous membrane of the cervix.

Professor Babes (Bukharest) read an interesting paper on the existence of other pathogenic microbes along with Koch's bacillus

in tubercular lesions, and assigned to them an important part in producing the symptoms of the disease. In tubercular lesions which open on the surface of the body, or into a mucous tract—lesions of the respiratory or digestive mucous membranes, pulmonary cavities, &c.—it is well known that many varieties of micro-organisms are generally present, being carried to the ulcerated spot, and finding there a suitable medium for their growth. Babes found different varieties of bacteria in cases in which the tubercular disease was so situated as not to be exposed to direct inoculation from without—such as meningitis, abscesses in bone, &c. Many of the organisms he found in these cases are those which form pus—among others staphylococcus aureus and albus, and streptococcus pyogenes. He connects these pathogenic organisms with the virulence and acuteness of the disease—that is to say, if the tubercle bacillus is the only microbe present in these lesions, the course of the disease is slow, and but little cheesy pus is formed. If, however, as is very often the case, other pathogenic microbes follow the tubercle bacillus, they flourish in the tissues weakened and degenerated under its influence, and produce extensive abscesses, purulent infiltration of the meninges, &c. He concludes his paper thus:—"We may say then that tuberculosis, at least in children, seldom of itself causes death. Generally the tubercular lesions open the door for the entrance of other bacteria; the secondary bacterial infection tends to increase the tuberculous process, and to aggravate the disease."

Professor Nocard laid much weight on the early and certain diagnosis of tuberculosis in cattle. He considers physical examination does not give certain evidence, and that the only satisfactory method is to examine the sputum, &c., for tubercle bacilli, or to test it by inoculation. It is, however, difficult to obtain the sputum of cattle; it is generally coughed up only into the mouth, and then swallowed. Professor Nocard recommends that the tongue be vigorously pulled out, so as to hinder swallowing, and then the larynx and trachea squeezed to provoke cough; in this way sputum may sometimes be obtained. Or else 15–20 centigrams of veratrin may be injected subcutaneously—this increases the amount of the secretions, and generally causes abundant sputum; or else the trachea and larynx may be wiped with a sponge attached to a long handle. Another member recommended that an incision should be made into the beast's trachea, and some of the sputum removed by a sponge.

There was a good deal of discussion on the various methods of treating tuberculosis; we have not, however, remarked anything that calls for special comment.

The next Congress is to meet in 1890.

On the Surgery of the Knee-joint and the Responsibility Placed on the Physician and General Practitioner by the Modern Progress of Surgery, being the Inaugural and Retiring Presidential Addresses Delivered before the West London Medico-Chirurgical Society, on October 7th, 1887, and May 4th, 1888, respectively. By C. B. Keetley, F.R.C.S.; Senior Surgeon to the West London Hospital, and Surgeon to its Orthopædic Department. (Reprint). London: Baillière, Tindall, & Cox. 1889. Pp. 25.

Mr. Keetley's name is so well and favourably known to students and practitioners that any work emanating from his pen is certain to attract attention and find numerous readers. The twenty-five pages that form the present little book will be found in no way wanting in the fulness of information that characterises the author's writing.

His familiarity with modern surgical literature enables him in the collected addresses to place clearly before the reader the marked progress surgery is making, and the consequent benefits to suffering humanity. And the author very properly urges on the practitioner the duty to his patient of recognising destructive tissue change at a very early stage of the disease, so that life may be prolonged and made comfortable by proper operative measures. Mr. Keetley's little book well deserves, and we hope will enjoy, a large circulation.

Twenty-eighth Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Fiscal Year ending December 31st, 1888. Cincinnati: 1889. 8vo. Pp. 102.

Cincinnati, the chief town of Ohio, with a population of 180,000, possesses a palatial hospital, maintained by municipal funds, and open to all. Persons able to pay for accommodation can here obtain private wards with the attendance of trained nurses, and can choose their own practitioner. The hospital consists of eight buildings, arranged *en échelon*, of which six pavilions, three storys high, are occupied by patients. Each pavilion has a ward on each floor,

with 36 beds in each ward of three pavilions, and 24 in each of the other three, allowing 1,800 cubic feet of air-space to each bed. Twenty-four private rooms accommodate paying patients. At one end of each ward are nurses' rooms, kitchen, dining-room for convalescents, closets for bedding and clothing, and lifts; at the other end bath-rooms, water-closets, and reading-room. The wards are classified as surgical, medical, obstetrical, ophthalmological, venereal, gynæcological, and children's; and the medical staff consists of four surgeons, four physicians, four obstetricians, two ophthalmologists, and two pathologists; half of these being on duty alternately for periods of four months. Every part of the hospital is in telegraphic and telephonic communication with the Superintendent's office in the central building, and there is similar connection between the hospital and the city and the branch hospital, more than five miles away. This latter institution is for contagious diseases, and, standing on 53 acres of its own ground, is completely isolated.

The gross daily cost of each patient in 1888 was 80·2 cents; the net cost, after deducting for improvements and repairs, nearly 6,000 dollars received for board, and some smaller items was 68·5 cents. 4,174 patients were admitted during the year (1,921 medical, 1,575 surgical cases), with a death-rate of 8·98 per cent. In the Nationality Table we find Germany supplying most patients of the foreign contribution—649; our countrymen numbering only 380.

An Atlas of Illustrations of Pathology. Fasciculus VII. Plates XXXII.–XXXV. London: The New Sydenham Society. 1889.

The lithographs in this fasciculus illustrate many points of medical and surgical interest. Plate XXXII. represents various forms of urinary concretions, some of them of curious origin—*e.g.*, a bone bodkin-case, incrusted with phosphates, removed from the bladder of a lady; a bit of sealing-wax, doubled-up, and coated with phosphates, removed by lithotomy from a man; and a calculous concretion, formed on a bit of straw. This patient had been in the habit of using straw as a catheter.

In the same plate are also figured a remarkable series of gall-stones, passed *per anum*. The case was recorded by Dr. J. W. Moore, Physician to the Meath Hospital, Dublin.

Plate XXXIII., copied from Mr. Stanley's work, shows, in an instructive way, the relations assumed by the bladder and rectum in a case of enormous enlargement of the prostate. The conditions of enlarged prostate are further illustrated in Plate XXXIV.

In Plate XXXV. we have an acceptable series of drawings of the characters and effects of the disease described by Sir James Paget as osteitis deformans. The figures refer to the case of a gentleman, who, when forty-six years of age, began to suffer from aching of the bones. He lived for twenty-two years subsequently, with gradually increasing symptoms of ill-health. His death was preceded by failure of strength and emaciation, and was finally ushered in by pleural effusion.

Elements of Practical Medicine. By Alfred H. Carter, M.D. Fifth Edition. London: H. K. Lewis. 1888. Pp. 472.

It is but a short time since the fourth edition was mentioned in our columns. The present edition has few alterations, but some parts have been readjusted with benefit to their clearness. The author deserves credit for having avoided the common fault of ruining an elementary book by attempting to squeeze too much into a short space. In the present work the main facts about each disease are given clearly and systematically, and the reader is encouraged to consult larger works for further details.

The result is that five editions have appeared in eight years.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. X. O.–Pfutsch. Washington: Government Printing Office. 1889. Octavo. Pp. 1059.

Once more it is our pleasing duty to congratulate Surgeon John S. Billings, of the United States Army, on the happy completion of another instalment of his great work. The tenth volume of the Index-Catalogue includes 7,658 author-titles, representing 2,905 volumes, and 7,282 pamphlets. It also includes 14,265 subject-titles of separate books and pamphlets, and 29,421 titles of articles in periodicals. It embraces references beginning with "O" and ending with "Pfutsch."

The ten volumes collectively contain 107,788 author-titles,

representing 54,298 volumes and 93,002 pamphlets, besides 107,419 book-titles and 336,772 references to journal articles. These figures will give some idea of the value of the Index-Catalogue as a work of reference.

The Journal of the British Dental Association; a Monthly Review of Dental Surgery.

THE September number of the *Journal of the British Dental Association* contains a very valuable contribution to the literature of anæsthetics, giving as it does the various claims of ether, chloroform, nitrous oxide, and mixed gases, as advocated at the Association meeting by Drs. Cruise, Macleod, Buxton, and Hewitt.

The fact that Dr. Cruise is a convert to ether may account for the fervour of his devotion—fervour is characteristic of converts. But we must take exception to some of his conclusions, and we do so reluctantly, for the author is so careful a writer and such an accomplished gentleman that any contribution from his pen is welcome to us. Nevertheless, we cannot agree to the statement that ether, "if carefully given," will not paralyse the heart, and to the deduction—"Herein lies its incalculable advantage over chloroform, which, however carefully administered, will sometimes cause sudden, unforeseen, and irremediable syncope."

If Dr. Cruise had read the *Philadelphia Medical and Surgical Reporter* for the 1st of June he would have seen the account of a case in which ether unmistakably influenced the heart, although it was "carefully given"; and Dr. Reeves, who strongly recommends ether ("Reference Hand-book of the Medical Sciences"), writes that "Death may take place under ether suddenly and by cardiac paralysis, the same as under chloroform." Moreover, the recent report of Surgeon-Major Lawrie to His Highness the Nizam of Hyderabad, tells a very different story as to the physiological action of chloroform to that put forward by Dr. Cruise. We state our objections freely because we know that the accomplished author's desire is to contribute of his experience toward the elucidation of truth, and the great weight his authority justly carries with his professional brethren makes it desirable that they should know to what extent he differs from other gentlemen of large experience of anæsthetics.

Chloroform found an able exponent of its claims in Dr. Macleod, who, we believe rightly, laid stress on the necessity for watching

the breathing of a chloroformed patient, and pointed out that chloroform is daily becoming more used.

We think, however, that the author might have laid more stress on the fact that with the termination of the chloroform anæsthesia all the risks end, whereas etherisation has not infrequently been followed by bronchitis, pneumonia, nephritis, and mania.

Nitrous oxide had its claims put forward by Dr. Dudley Buxton. It, however, is unsuited for prolonged operations, and the death of Lady Milne under its influence tells that it is not so devoid of danger as its advocates would have us believe.

Dr. Hewitt's contribution to the discussion was a summary of the views put forward in his recently published book, and they are familiar to all who are read in the literature of anæsthetics. It is sufficient to say that his method is unsuited for any surgeon who is not daily obliged to use an anæsthetic.

Altogether the discussion is an interesting and useful contribution to the current literature of the subject, but we cannot but confess that no new views were brought forward, and that at best the speeches were but the re-echo of the past.

The A. B. C. Medical Diary and Visiting List. 1890. Published by Burroughs, Wellcome, & Co., Snow-hill Buildings, London.

We have received a copy of this very useful publication, neatly bound in leatherette, and enclosed in a pig-skin letter-case. It is published in this form at four shillings and six pence complete; or at half-a-crown in silk, leatherette, or morocco leather. At these prices the Diary will be sent post free to any member of the Medical Profession in the United Kingdom.

A ripe experience of this Diary and Visiting List enables us to recommend it with entire confidence.

On Bedside Urine-Testing: a Clinical Guide to the Observation of Urine in the Course of Work. By George Oliver, M.D. Fourth Edition. London: H. K. Lewis. 1889. Pp. 236.

This is a most useful handbook to the clinical examination of urine, the various physiological and pathological appearances being carefully and clearly described, and the tests indicated. Of course Dr. Oliver lays a good deal of stress on the test papers which bear his name; on the ground of their portability, easy application, and their accuracy; but some little experience with these papers con-

firm his statements, and for immediate testing at the home of the patient they will probably gradually come into extended use.

The present edition has some minor changes, but is not otherwise different from the third.

Recent Essays by various Authors on Bacteria in relation to Disease. Selected and Edited by W. WATSON CHEYNE, M.B., F.R.C.S. London: New Sydenham Society. 1886.

NOT only pathological specialists, but all lovers of the exact in medicine, will be ready to welcome a volume which collects into one group an important series of monographs from various sources bearing upon the ætiology of disease.

The task of editing was intrusted to the competent hands of Dr. Watson Cheyne, and he has thoroughly done his part. It would be impossible to attempt to give an abstract of the contents. Suffice it to say that among the authors we find the names of Koch, Gaffky, Neisser, Fehleisen, Friedländer, Löffler, Schütz, Israël, and Pasteur. The topics discussed include papers on the methods of investigation of pathogenic organisms; the ætiology of tuberculosis; the ætiology of enteric fever, erysipelas, leprosy, pneumonia, cholera, and glanders; on micro-organisms in relation to suppuration and septic diseases; diphtheria; actinomycosis; and disinfection. The volume concludes with a series of abstracts by Dr. Dawson Williams of recent researches by Pasteur on attenuated virus and protective vaccination. It is illustrated by eight excellent plates.

Here we have indeed abundant food for all, and dull must be the appetite which cannot enjoy some of the good things provided by the New Sydenham Society in this collection of essays.

We may direct special attention to the section on "the relations of the tubercle bacilli to the ætiology of tuberculosis" (page 184), in which Koch gives an interesting and lucid account of the practical aspects of his brilliant discovery.

Speaking of disinfectants (page 514), Koch asserts that his experiments "show that the only real disinfectants (*i.e.*, re-agents capable of destroying micro-organisms) available for practical purposes are chlorine, bromine, and corrosive sublimate; while the most potent 'antiseptics' (*i.e.*, re-agents preventing the growth of micro-organisms) are mercuric chloride, certain ethereal oils, and allyl alcohol."

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.K.Q.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF PATHOLOGY.

President—E. H. Bennett, M.D.
Sectional Secretary—J. B. Story, F.R.C.S.I.

Friday, November 1, 1889.

The President in the Chair.

The President's Address.

The President delivered an address.

Fracture of the Skull, with Hernia Cerebri.

Dr. T. Evelyn Little made a communication on the above subject. [It will be found at page 473.]

The President said the disproportion between the injury to the bone and the injury to the brain was fully borne out by the experiments, which had demonstrated the great elasticity of the skull in children.

Dr. Swanzy said the feature of the case which had interested him most was the symptom of the turning of the head towards the side on which the injury was situated. As Dr. Little had mentioned, that was generally associated with rotation of the eyes in the same direction. There was a conjugate deviation of the eyes and head towards the same side. But they might have one part of this duplex symptom without the other. In health a very discursive motion of the eyes to one side was usually associated with a motion of the head in the same direction; nevertheless, by a slight effort of the will it was possible to turn the eyes while the head was kept steady, or to turn the head while the eyes were kept fixed. Consequently they need not be surprised if in any diseased condition they should occasionally find one part of this duplex symptom without the other. With regard to the position of this centre

of motion of the head and eyes, Ferrier, by experiments made some years ago on monkeys, satisfied himself that it was situated in the superior and posterior parts of the middle frontal convolutions. Some time afterwards Grasset argued from clinical observations that the site was in the inferior parietal lobuli. Some time after the site was placed by Horsley again in the frontal lobe. A few months ago Wernicke ascertained to his complete satisfaction that it was situated in the inferior parietal lobuli; and now they had Dr. Little placing it in the frontal lobe.

Dr. Little, in reply, admitted that there were different theories with respect to conjugate deviation of the head and eyes. As to the deviation in this case having been due to some more distant lesion of the brain, he felt some difficulty in adopting that supposition. Although the amount of brain substance lost was very considerable compared with the injury, still it was remarkably definite and remarkably local; and these circumstances were of importance in connection with the question of localisation. To say that the lesion here might have produced symptoms of interference with centres in other parts of the brain was no more than what could be said with respect to any lesion, traumatic or from disease, in any part of the brain.

Case of Renal Calculus.

Dr. J. K. Barton communicated a case of renal calculus, which had been successfully removed by a surgical operation. The calculus had been tightly wedged into the calices of the kidney.

Dr. Foot asked was there any history of hæmaturia in the case? That symptom was an obvious one in the diagnosis of renal calculus; still he should not have thought it likely to occur here on account of this being a fixed calculus.

Dr. Barton, in reply, said the patient had no hæmaturia. The urine was faintly acid, but became alkaline after it had stood for some time.

Case of Conjunctival Cyst.

Dr. J. B. Story submitted a conjunctival cyst which had been removed from the eye of a baby aged six weeks. It was attached to the cornea, and sent a band backwards to the internal rectus muscle, from which it had to be raised by a strabismus hook. The cyst was a dermoid, and Mr. Scott exhibited microscopic sections of its wall.

Mr. Story commented upon the presence of these dermoid cysts in cases of coloboma of the lids, and dermoid bands uniting the globe to the skin of the face, and stated his approval of the theory of Van Duyse, who attributed all these defects to the existence of amniotic adhesions in embryonic life.

The President remarked that adhesions between the amnion and the surfaces of the embryo were the greatest cause of these congenital defects.

Tubercular Kidney.

Dr. Heuston submitted an example of tubercular kidney in a boy aged thirteen, which had been successfully removed by surgical operation, and said there were microscopic specimens of the kidney on the table showing the giant cells and other evidences of tubercular disease. He had been unable, however, to detect in these specimens the bacillus tuberculosis.

SECTION OF SURGERY.

President—Austin Meldon, President of the Royal College of Surgeons, Ireland.

Sectional Secretary—Mr. W. Thornley Stoker.

Friday, November 8, 1889.

The President in the Chair.

The President's Address.

The President delivered an address on general subjects of surgical practice, giving scope for progress.

Operative Treatment of Tubercular Disease of the Knee-joint.

Mr. Thomson read a paper on the operative treatment of tubercular disease of the knee-joint. Having referred specially to the infective character of tuberculosis, he pointed out that where the condition of the synovial membrane demanded operation the disease was rarely so limited as to be removed by simple erasion. In some cases where the cartilages were apparently quite healthy, the bone was found on section to be diseased, and yet this was the sort of case which the thorough-going eraser would regard as typical for his treatment. The securing of movement after erasion was being abandoned, and that being so, ankylosis could be more surely and quickly secured between two level bone surfaces, as in excision, than by the opposition of two irregular cartilage-covered surfaces. Shortening sometimes occurred where no operation was done, so that this objection could not be fairly argued as a result of excision. If the disease was extensive enough to lead them to the epiphysary line they must go there even at the risk of shortening. He maintained that excision was safer and more satisfactory than erasion. He had excised the knee seventeen times without a death; but in two of his cases, before adopting the combined methods of fixing by Thornley Stoker's dowels, and the use of his own hoop-iron splint, he had to amputate. In his hospital in fifty successive cases of excision of the knee-

joint, there had been only one death—a result which left little to be desired.

Mr. Tobin thought that Mr. Thomson had not indicated clearly what cases ought to be submitted to operation, nor had he suggested an answer to the difficult question—"Shall I operate at once, or wait, and if I wait, how long?" It was important to determine whether an operation should be performed at once in every case diagnosticated as tubercular synovitis, or whether it would be desirable to wait till the bones were attacked, or still longer, till suppuration had set in. For his own part, he would wait longer than Mr. Thomson seemed to approve, having regard to the fact that by the use of Thomas's splint, complete rest and change of air, he had seen great cures effected. Moreover, he did not see that a resected knee had much advantage over an amputated leg supported by the modern improved artificial appliances. In illustration, he had asked a man at Netley, who had lost a leg, what they gave him for it, and the brave fellow cheerfully replied, "Eighteenpence a day, and I would gladly give e other at the same price!" Indeed, could the test be applied of a cricket match between eleven who had undergone amputation and eleven upon whom excision had been performed, taking eleven ordinary as distinguished from selected cases of excision, he would bet his last penny on the eleven with the amputated legs. However, as regards the method of excision, he could not speak too highly of Mr. Thomson's operations, but he differed from Mr. Thomson on the advisability of early operation. He had tried Mr. Stoker's pegs, but in the cases in which he used them they gave little or no fixation. He sometimes found that while a straight limb was obtained for three or four years it afterwards got crooked.

Sir Wm. Stokes endorsed Mr. Thomson's views as to the superiority of excision of the knee over the operation of erasion or arthrectomy. As to the time for operation, it was impossible to lay down a rule, but speaking from his own tolerably large experience of the operation, he held that as soon as the surgeon satisfied himself he had to deal with tuberculous disease of the joint, the earlier the operation was performed the better was likely to be the result. He repudiated the statement put forward in more than one handbook of operative surgery that knee-joint resection would soon be an operation merely of history. On the contrary, the operation never enjoyed a greater reputation than at present, and he believed its reputation was likely to increase. He did not at all agree with Mr. Tobin's estimate of amputation. The results from excision achieved both by his former colleagues and himself in the Richmond Hospital had been eminently satisfactory. As an instance, a man aged thirty-nine, suffering from disease not merely of the soft structures but of the bones, underwent resection, and was now able to walk from Lucan into Dublin and back again every market day. He preferred a splint which he himself had devised to Mr. Thomson's, as ensuring absolute fixation and rigidity

of the limb, and also as rendering unnecessary the dowelling as recommended by Mr. Thornley Stoker.

Mr. J. K. Barton, referring to the question raised by Mr. Tobin of the general advisability of the operation, mentioned the case of a housemaid upon whom excision had been performed, and who discharged her duties a whole year without her mistress being aware that there had been anything the matter with her, while he submitted that had she suffered amputation the mistress could not possibly have remained ignorant of the fact.

Mr. Tobin intervened to deny that he had questioned the advisability of excision, an operation which he frequently practised himself, and said his point was as to the cases suitable for that operation.

Mr. Barton said the real point was as to the procedure, and he had no doubt there were cases of disease of the synovial membrane in which erasion might be profitably performed instead of excision; but erasion could not be favourably compared with, or take the place of, excision in cases of tubercular disease. He did not sympathise with Mr. Thomson's advocacy of the removal of sound bone, but otherwise he agreed in the main with Mr. Thomson's views. Instead of Mr. Stoker's pegs he used strong antiseptic catgut which did not yield until danger had passed away.

Mr. Lentaigne concurred with Sir Wm. Stokes that excision was the best treatment for tubercular disease of the knee-joint, and ought to be performed as soon as the disease was recognised; and if the limb became crooked afterwards it was the fault either of the surgeon or of the patient and very often of both. The surgeon should scrape the sinuses till satisfied the tubercular disease was removed. No doubt, a certain number of cases would recover under palliative treatment, but it was impossible to form an accurate prognosis as to which would recover, and in the uncertainty, where the patient might lose his life through neglect by not operating in time, the surgeon was bound to give the best chance. In some cases erasion would be of no value, but the procedure was as yet on its trial.

Mr. Bennett questioned the dictum that excision was the proper and right treatment once the diagnosis was tubercular disease, and contended that Mr. Thomson had not committed himself to such a proposition once he admitted that he dealt with excision in reference to hospital patients and not the treatment of patients of the upper classes. Indeed Mr. Holmes' challenge had never be accepted as to any case of excision having been done in private practice—(Mr. Thomson: I had one.) The vast majority of such cases in the upper classes were treated without excision. Patients had recovered from white swelling of the knee with all the due care and rest that could be given in private practice. But where tubercular disease was running riot there was no longer the alternative of palliative treatment, and it then became a choice between

excision and amputation. At the same time he had seen cases of recovery take place even after suppuration had set in.

Mr. Swan observed that the spontaneous cure alluded to by Mr. Bennett was the established practice of a great many eminent London surgeons, including Howard Marsh and Owen, the latter of whom had extensive practice with children, and believed in letting the joint suppurate; but the average period of cure was three years—a longer time than could be afforded for hospital patients.

Mr. Franks took up Mr. Holmes' challenge and said he had himself operated by excision for tubercular disease of the joint in the case of a female patient with success, as Mr. Swan and Mr. Barton could testify. Patients could not be kept in hospitals for years awaiting the result of spontaneous cure when, probably, as good a result could be had in a few months. Comparing tubercular disease of the knee-joint with tubercular disease of the lung, it was notorious as regards spontaneous cure that many got well from a trip to France, or the Mauritius, or elsewhere, while cases of phthisis among the poor also got well in Dublin hospitals, but the chances of the poor under such conditions were small as compared with those of the rich, who could afford good diet and foreign travel.

Mr. Thornley Stoker held that whereas excision was an operation of established repute, yet that of erasion was on its trial and accordingly no decisive opinion could be expressed about it. For the past two years he had been anxiously watching to get a suitable case for erasion, but in every instance where he commenced the operation he had been obliged to complete it by carrying out excision. As regards the time to operate, he had frequently had cause to regret delay, but he had never had cause to regret the premature performance of the operation, nor had he seen such a case in the practice of his colleagues. He did not recommend that dowels should be employed in all cases; for instance he would not use them where the bone was soft, or where he had to scoop out with the Volkmann spoon large quantities of bone after making the sections; but where they could be properly employed they secured fixation which could not be obtained by other means. Bending of the limb subsequent to operation might occur in most skilled hands, but it was due to a preventable cause—namely, leaving too much of the epiphysis of the femur in front while the entire epiphysis was cut away behind. He thought Sir William Stokes' splint a clumsy apparatus, far inferior to Mr. Thomson's, and with the fatal defect of anchoring the patient's leg to the bed as with the old-fashioned box splint. As to Mr. Barton's condemnation of the dowels, he asked him did he ever try them?

Mr. Barton—I did not condemn the dowels; I praised the catgut.

Sir Wm. Stokes explained that his splint was not fixed to the bed, as Mr. Stoker erroneously supposed, but could be elevated or lowered as the surgeon pleased.

Mr. Stoker said it was fixed to the bed by the cross-piece on which it rested.

Mr. Corley said, as regards when to operate and what cases to operate on, there was no test but experience, nor could the surgeon tell until after the joint was opened and a prepared section placed under the microscope, whether the disease was tuberculous or not. He submitted that when the surgeon recognised pulpy thickening of the knee-joint, as it was called in the nomenclature of Sir Benjamin Brodie's day, palliative or medical treatment was worthless, and the sooner the patient got the chance of a good limb by operative procedure the better. It was impossible to tell whether a bone was diseased or not until the surgeon cut it. He did not think amputation and excision could be compared, not to speak of the enormous mortality attending amputation of the thigh. Neither could erasion and excision be compared, as being intended for different conditions. He had seen cases in private treated in the expectant way turn out well, especially one case, but the treatment occupied seven years.

Mr. Wheeler held that where excision was necessary it should be done early. The bones should be always cut. Dowels, as recommended by Mr. Stoker, he regarded as unnecessary. He could not agree in the advisability of allowing the joints to suppurate. In his experience it was only in children that the excised joints bent. He had himself performed the operation of excision of the knee-joint in two private cases, and now one of the patients was able to walk nine miles at a stretch.

Mr. Thomson replied. He said he had advisedly narrowed the scope of his communication by omitting conditions anterior or preliminary to the question of excision *versus* erasion, two operations which he found pitted against each other. As to the time to operate, the sooner the better, once the surgeon saw distinct pulpy degeneration of the synovial membrane. It was impossible to lay down a fixed rule as to the particular moment in a particular case. Every surgeon must be guided by his own experience. He did not think that Mr. Tobin was serious in comparing the results of resection and amputation. He regarded his observations as jocular. As to erasion, he could understand the procedure where there was perfectly localised tuberculosis that could be fixed and taken away; but the moment it became necessary to open the knee-joint and erase the synovial membrane as a whole, it was much better surgery to make a section and excise the knee in the ordinary way. No doubt there were cases that got well, even though suppuration had set in, but the surgeon who had faith in expectant treatment must remember that he was running the cure of the knee against the patient's life; that he was running the risk of losing the limb altogether, and setting up the seeds of mischief which would ultimately carry off the patient.

SECTION OF MEDICINE.

President—LOMBE ATTHILL, President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, November 15, 1889.

The PRESIDENT in the Chair.

The President's Address.

The PRESIDENT made some remarks *àpropos* of the opening meeting.

Morphinism.

DR. FOOT read a paper on the above subject. [It will be found at page 457.]

DR. MACSWINEY referred to the late Mr. Frank Rynd as the probable introducer of the practice of the subcutaneous injection of sedatives, having seen him about 1847 or 1848 in the Meath Hospital administer a preparation which he had no doubt was an opiate or other sedative by introducing it with an instrument 2 or 3 inches long into the thigh of a man who was suffering from sciatica. As regards treatment, he recalled a case recorded in Anthony Todd Thompson's text-book on Materia Medica, a laudanum drinker who, though he was in the habit of taking a wineglassful at a time, was cured by the gradual elimination or deprivation process. A quart bottleful was procured, and for every glass of the drug taken out a glass of water was substituted, with complete success.

DR. FALKINER mentioned the case of a schoolteacher whom he saw take 5 ounces of laudanum at a draught, and afterwards gave up the habit.

DR. EUSTACE advocated the abrupt and sudden total withdrawal of the drug in morphinism, and of the spirits in alcoholism, as the best and most scientific treatment. As a rule, only a partial cure was effected, for sooner or later temptation led to a relapse. He instanced an American gentleman who had, fourteen years ago, voluntarily entered the lunatic asylum under his own care in order to be cured. In that case the supplies were suddenly stopped and the gentleman was told distinctly he was no longer his own master, and that he could have no more. Though for a week the patient had had a bad time of it, yet he soon realised the necessity for submission, and having been cured, he showed gratitude by revisiting the asylum some years afterwards. From personal experience during illness, he knew what terrible suffering was endured from being suddenly deprived of morphin. Speaking generally, since no two persons were alike, whether sane or insane, no set rule

could be laid down for treatment, which must be adapted to the particular case.

The PRESIDENT's experience led him to advocate gradually diminishing doses. He knew a medical man who took $\frac{1}{6}$ gr. four or five times in the twenty-four hours, and who had the firmness not to exceed that dose.

DR. WALTER G. SMITH said it was difficult, in regarding the action of drugs of a certain class on the higher parts of our nervous system, to restrict consideration to any particular drug such as morphin without bringing into consideration also the effects of other drugs of allied action. Thus there were two groups which might be arranged in the ascending scale of action—one, the alkaloids, and the other the members of the fatty series, including chloral, ether, alcohol, &c. Dr. Foot had adverted to this class distinction, indicating that the prolonged use of one of the members of the fatty series was liable to induce general tissue change and lead to death, whereas members of the alkaloid series affected chiefly the higher or psychical, emotional and intellectual nerve centres, causing death by their action on the respiratory and cardiac centres. It was puzzling to reflect how some could take with impunity hundreds of times more morphin than would kill an ordinary person. That was a difficult question, to which no sufficiently satisfactory answer had yet been given beyond the region of vague speculation. With regard to treatment, he did not think any amount of discomfort entailed on the patient was a good reason for objecting to the sudden total withdrawal of the drug. As to the treatment of alcoholism, there was still a difference of opinion, some adopting the total withdrawal, others the tapering-off process. He would himself stand by the total withdrawal. With due reservation in particular cases, the same principle should apply to that whole class of drugs. It was impossible to effect cure without absolute control, and that could not be had except by isolation in a suitable institution, to save the patient from his worst enemy—himself.

DR. JAMES LITTLE thought that Dr. Eustace had sufficiently answered his own recommendation by giving an account of his own sufferings. Even though the ultimate good of the patient was in view, he did not believe in disregarding the horrible torture, the intolerable suffering produced by sudden total withdrawal; and, on the contrary, he thought the nervous system of the patient never recovered entirely from the wreck of misery and wretchedness produced by such treatment. For his own part, he had seen patients get on very well by gradually stopping the drug. The plan Dr. Foot had mentioned was the one which he had always adopted—namely, the gradual diminution of the drug. He knew of a gentleman who had suffered from stone in the bladder, for which he was relieved by Sir Henry Thompson; but before the operation was undertaken he had suffered terrific agony, and he relieved the pain by hypodermic injections of morphin. This was the beginning of what

grew into a habit. At length, however, that gentleman cured himself by the process of gradual diminution; he got a 2 oz. solution, and whenever he used 10 minims he filled up the bottle with distilled water, and he did not feel the smallest discomfort from the gradual reduction process. He had himself adopted the same plan since with men and women, and it had always been successful. With regard to limitations, if a man was otherwise in perfect health, alcohol, and perhaps morphin, too, might be stopped altogether without harm; but if the patient had any illness, even a catarrh, or slight fever, or a sprained ankle—the smallest thing—he would be exposed to terrible risk by suddenly stopping either alcohol or morphin.

Dr. Foot, in replying, said he thought Dr. Eustace had given the key-note to the discussion. There were two classes of cases to be considered. Thus, Charcot drew a distinction between what he called morphinism and morphinomania, the former being the state of a person who had recently acquired a taste for morphin, whether from temptation, imitation, curiosity, or for relief of pain; and the latter the condition of mental deterioration known to exist only in those with such a craving, insufferable hunger that destroyed body and soul, that they would jump into hell to get their morphin. The morphinomaniac in his periods of satisfaction would bewail his condition, but would otherwise have no real desire to be cured, and would seize the first opportunity of getting morphin. He must therefore accordingly be treated as a lunatic. On the other hand, the morphinist wished to be cured and would assist in carrying out the graduated, or tapering-off plan, which was the advisable treatment in such a case; for experience showed that total withdrawal was followed by what the Germans called "*Abstinenz Symptome*," or reactionary effects, which had sometimes proved fatal. Instance a recorded case of a woman, a lunatic and a morphinist, who had escaped from the Hospice de la Salpêtrière in Paris. Having forgotten her morphin, she became violent when the hour came for her usual dose, and she was taken by the police and died in a condition of syncope. Judging physiologically and from the recorded experience of continental physicians, nothing recommended itself in such cases so much as nitro-glycerine (2 or 3 drops) and ammoniated tincture of valerian. The three most troublesome cases he had had were in medical men. As to the question what became of morphin, taken habitually, no doubt it was largely eliminated by the kidneys; and woe betide the man who took much whose kidneys were not in good order; his fate would be opium poisoning. Hence the perfection of the man's kidneys was one of the reasons why a morphinist could take large doses for a length of time.

The Section adjourned.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, November 2, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Oct. 12.	Oct. 19.	Oct. 26.	Nov. 2.		Oct. 12.	Oct. 19.	Oct. 26.	Nov. 2.
Armagh -	15·5	25·8	5·2	25·8	Limerick -	27·0	24·3	17·5	21·6
Belfast -	20·2	26·8	21·8	24·1	Lisburn -	14·5	24·2	33·8	14·5
Cork -	27·9	16·9	15·6	18·2	Londonderry	17·8	17·8	25·0	19·6
Drogheda	25·4	38·1	4·2	4·2	Lurgan -	15·4	15·4	10·3	25·7
Dublin -	22·3	26·0	20·5	26·1	Newry -	17·6	17·6	7·0	17·6
Dundalk -	4·4	13·1	26·2	17·5	Sligo -	24·1	19·2	14·4	9·6
Galway -	23·5	6·7	26·9	16·8	Waterford -	18·5	18·5	23·2	6·9
Kilkenny	12·7	46·5	25·4	4·2	Wexford -	29·9	4·3	4·3	8·6

In the week ending Saturday, October 12, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 15·8), was equal to an average annual death-rate of 17·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·3 per 1,000. In Glasgow the rate was 21·6, and in Edinburgh it was 16·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in seven of the districts to 4·8 in Sligo and Lisburn—the 5 deaths in the former district comprising 1 from whooping-cough, and the 3 deaths in the latter comprising 1 from diarrhœa. Among the 89

deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 7 from enteric fever, and 3 from diarrhœa. The 20 deaths in Limerick comprise 1 from scarlatina and 2 from typhus.

In the Dublin Registration District the births registered during the week amounted to 138—69 boys and 69 girls; and the deaths to 157—83 males and 74 females.

The deaths, which are 10 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 23·2 in every 1,000 of the estimated population. Omitting the deaths (6 in number) of persons admitted into public institutions from localities outside the district, the rate was 22·3 per 1,000. During the first forty-one weeks of the current year the death-rate averaged 25·4, and was 3·4 under the mean rate in the corresponding period of the ten years 1879–88.

Thirty deaths from zymotic diseases were registered, being 2 in excess of the average for the corresponding week of the last ten years, and also 2 over the number for the week ended October 5. They comprise 2 from measles, 7 from enteric fever, 13 from diarrhœa, 1 from dysentery, 1 from erysipelas, &c.

The number of cases of enteric fever admitted to hospital is 27, being 1 under the admissions for the preceding week. Thirteen enteric fever patients were discharged, 5 died, and 97 remained under treatment on Saturday, being 9 over the number in hospital on Saturday, October 5.

No cases of scarlatina and only 2 cases of typhus were admitted to hospital: 8 cases of scarlatina and 8 of typhus remained under treatment in hospital on Saturday.

The other cases admitted to hospital comprise 5 of measles, being equal to the number of cases of that disease admitted during the preceding week: 8 cases of measles remained under treatment in hospital on Saturday.

Twenty-eight deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, and also equal to the average for the forty-first week of the last ten years. They comprise 20 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 19, the mortality in twenty-eight large English towns, including London (in which the rate was 16·9), was equal to an average annual death-rate of 18·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·5 per 1,000. In Glasgow the rate was 23·1, and in Edinburgh it was 19·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in Newry, Wexford, Dundalk, Sligo, Lisburn, and Lurgan, to 16·9 in Kilkenny. The 11 deaths from all causes registered in the last-named district comprise 1 from typhus and 3 from simple continued fever. Among the 118 deaths from all causes registered in Belfast are 1 each from measles, scarlatina, whooping-cough, and simple continued fever, 5 from enteric fever, and 7 from diarrhœa. Among the 18 deaths in Limerick are 2 from scarlatina, and the 9 deaths in Drogheda comprise 1 from scarlatina and 1 from typhus.

In the Dublin Registration District the births registered during the week amounted to 169—79 boys and 90 girls; and the deaths to 179—93 males and 86 females.

The deaths, which are 11 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 26·4 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·0 per 1,000. During the first forty-two weeks of the current year the death-rate averaged 25·4, and was 3·4 under the mean rate in the corresponding period of the ten years 1879-88.

The number of deaths from zymotic diseases registered is 20, being 10 under the number for the preceding week, and 6 under the average for the forty-second week of the last ten years. The 20 deaths comprise 2 from measles, 1 from scarlet fever (scarlatina), 10 from enteric fever, 6 from diarrhœa, &c.

Thirty-one cases of enteric fever were admitted to hospital, being 4 over the admissions for the preceding week. Fourteen enteric fever patients were discharged, 5 died, and 109 remained under treatment on Saturday, being 12 over the number in hospital on Saturday, October 12.

No cases of scarlatina and only 2 of typhus were admitted to hospital. 7 cases of the former and 8 of the latter disease remained under treatment in hospital on Saturday.

Only 3 cases of measles were admitted, against 5 admissions in the preceding week, and there were only 8 cases of the disease in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 27, being 4 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended October 12. The 27 deaths comprise 14 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 26, the mortality in twenty-eight large English towns, including London (in which the rate was

15·7), was equal to an average annual death-rate of 17·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·3 per 1,000. In Glasgow the rate was 23·2, and in Edinburgh it was 15·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 19·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in seven of the districts to 6·9 in Waterford—the 10 deaths from all causes registered in that district comprising 1 from enteric fever and 2 from diarrhœa. Among the 96 deaths from all causes registered in Belfast are 2 from measles, 3 from whooping-cough, 3 from simple continued fever, 4 from enteric fever, and 6 from diarrhœa. The 13 deaths in Limerick comprise 1 each from scarlatina and whooping-cough, and the 14 deaths in Londonderry comprise 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 202—95 boys and 107 girls; and the deaths to 142—77 males and 65 females.

The deaths, which are 33 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 21·0 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 20·5 per 1,000. During the first forty-three weeks of the current year the death-rate averaged 25·3, and was 3·4 under the mean rate in the corresponding period of the ten years 1879–88.

The number of deaths from zymotic diseases registered is 19, being 9 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended October 19. The 19 deaths consist of 1 from measles, 1 from typhus, 1 from whooping-cough, 1 from diphtheria, 5 from enteric fever (being 5 under the number of deaths from that disease in the preceding week), 8 from diarrhœa, 1 from dysentery, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital is 30, being 1 under the admissions for the preceding week. Seventeen enteric fever patients were discharged, 3 died, and 119 remained under treatment on Saturday, being 10 over the number in hospital on Saturday, October 19.

The hospital admissions include also 5 cases of typhus, against 2 for each of the three weeks preceding; 3 of scarlatina, being the only cases of that disease admitted during the last four weeks; and 5 cases of measles against 3 for the week ended October 19. Eight cases of typhus, 6 of scarlatina, and 9 of measles remained under treatment in hospital on Saturday.

Only 19 deaths from diseases of the respiratory system were registered.

being 17 below the average for the corresponding week of the last ten years, and 8 under the number for the week ended October 19. They comprise 10 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 2, the mortality in twenty-eight large English towns, including London (in which the rate was 15·8), was equal to an average annual death-rate of 17·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 23·7, and in Edinburgh it was 17·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in seven of the districts to 7·0 in Newry—the 5 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 106 deaths from all causes registered in Belfast are 4 from measles, 1 from scarlatina, 5 from enteric fever, and 3 from diarrhœa. The 16 deaths in Limerick comprise 2 from scarlatina, 1 from whooping-cough, and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 164—86 boys and 78 girls; and the deaths to 185—93 males and 92 females.

The deaths, which are 4 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 27·3 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·1 per 1,000. During the first forty-four weeks of the current year the death-rate averaged 25·3, and was 3·4 under the mean rate in the corresponding period of the ten years 1879–88.

Twenty-six deaths from zymotic diseases were registered, being 7 over the number for the preceding week, but 2 under the average for the forty-fourth week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 1 from typhus, 1 from ill-defined fever, 9 from enteric fever, 5 from diarrhœa, 2 from dysentery, &c.

There has been a slight decline in the number of cases of enteric fever admitted to hospital, the admissions for this week being 27, or 3 under the number for the preceding week, and 4 under that for the week ended October 19. Twenty-three enteric fever patients were discharged, 2 died, and 121 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

Nineteen cases of measles were admitted to hospital against 5 for the preceding week. Six patients were discharged, and 22 remained under

treatment on Saturday, being 13 over the number in hospital on Saturday, October 26.

Only one case of typhus and one of scarlatina were admitted, against 5 cases of the former and 3 of the latter disease admitted during the preceding week. Seven cases of typhus and 7 of scarlatina remained under treatment in hospital on Saturday.

Forty deaths from diseases of the respiratory system were registered, being 21 over the low number for the preceding week, and 3 in excess of the average for the forty-fourth week of the last ten years. They consist of 25 from bronchitis, 14 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of October, 1889.

Mean Height of Barometer,	29·673 inches.
Maximal Height of Barometer (on 25th, at 9 p.m.),	30·293 „
Minimal Height of Barometer (on 7th, at 4 a.m.),	28·790 „
Mean Dry-bulb Temperature,	47·5°.
Mean Wet-bulb Temperature,	46·0°.
Mean Dew-point Temperature,	44·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·292 inch.
Mean Humidity,	88·9 per cent.
Highest Temperature in Shade (on 7th),	57·4°.
Lowest Temperature in Shade (on 14th),	35·2°.
Lowest Temperature on Grass (Radiation) (on 14th),	28·6°
Mean Amount of Cloud,	66·0 per cent.
Rainfall (on 22 days),	4·853 inches.
Greatest Daily Rainfall (on 19th),	·944 inch .
General Directions of Wind,	W., E.N.E.

Remarks.

A cold, rainy, squally month—westerly and south-westerly winds prevailing at first, while easterly and north-easterly winds held from the 18th to the 29th. A gale of exceptional violence blew over Ireland on the night of the 6th, the wind rising from S.S.E. and subsequently veering to W. and W.N.W. There was another storm—less destructive in its effects—on the night of the 31st.

In Dublin the mean temperature (48·1°) was considerably below the average (49·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 47·5°. In the twenty-four years ending with 1888, October was coldest in 1880 (M. T. = 45·4°), and in 1885 (M. T. = 45·5°), and warmest in 1876 (M.T. = 53·1°). In 1886, the M. T. was as high as 52·0°; in

the year 1879 (the "cold year") it was 49·7°. In 1887 it was as low as 47·3°; and in 1888, it was 49·1°.

The mean height of the barometer was 29·673 inches, or 0·174 inch below the average value for October—namely, 29·847 inches. The mercury rose to 30·293 inches at 9 p.m. of the 25th, and fell to 28·790 inches at 4 a.m. of the 7th. The observed range of atmospherical pressure was, therefore, 1·503 inches—that is, a little more than an inch and one half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 47·5°, or 7·6° below the value for September, and 10·1° below that for August, 1889; that calculated by Kaemtz's formula—viz. *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 47·2°, or 2·0° below the average mean temperature for October, calculated in the same way, in the twenty years, 1865–84, inclusive (49·2°). The arithmetical mean of the maximal and minimal readings was 48·1°, compared with a twenty-three years' average of 49·8°. On the 7th the thermometer in the screen rose to 57·4°—wind, S.S.W.; on the 14th the temperature fell to 35·2°—wind calm. The minimum on the grass was 28·6° on the 14th. The rainfall was 4·853 inches, distributed over 22 days—both rainfall and rainy days were largely in excess. The average rainfall for October in the twenty-three years, 1865–87, inclusive, was 3·111 inches, and the average number of rainy days was 17·4. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1884, only ·834 inch was measured on but 14 days, and in 1868 only ·856 inch on 15 days. In 1888 the rainfall was 1·227 inches on 16 days. A lunar rainbow was seen on the 6th. High winds were noted on 10 days, and attained the force of a gale on four occasions, the 6th, 7th, 9th, and 31st. The atmosphere was more or less foggy in Dublin on the 10th, 14th, and 29th. Lightning was seen on the evenings of the 8th and 21st. Thunder was heard about 8 p.m. of the 21st. Hail fell with heavy showers of rain on the 7th and 25th.

Tuesday, the 1st, was a cool, fine day, with light northerly wind and dry air. On Wednesday, the 2nd, a complex series of atmospherical depressions came in from the westward over the United Kingdom, and in consequence the weather fell into a very dull and rainy state—more particularly as areas of high pressure existed both in the extreme North of Europe and over the Peninsula and South of France. At 8 a.m. of Friday, the 4th, the distribution of temperature was peculiar—at Loughborough in Leicestershire the thermometer marked 34°, at Yarmouth it was 51°, while at Bodö, in Norway (within the Arctic circle) it was as high as 58°. The rainfall was very heavy at many stations, and thunder and lightning were reported from the East and South of England on Thursday night and on Friday.

At first unsettled, stormy, and rough, the weather afterwards became quiet, cool, and fair in the week ending Saturday, the 12th. On Sunday, the 6th, the sky and clouds wore a very threatening look, and in the afternoon the barometer fell at the rate of a tenth of an inch an hour, as a very deep depression approached the North of Ireland from the Atlantic. In Dublin rain fell fitfully from 8 p.m., and at 10 p.m. a furious gale burst upon the city. The wind rose from S.S.E. to S., but veered to S.W., and finally to W.N.W., as the night wore on. At 10 30 p.m. a lunar rainbow was seen. The gusts were at times of hurricane force, so that much damage was done, especially to trees which were still in full leaf. The minimal pressure was 28·51 inches at Mullaghmore, Co. Sligo; in Dublin the barometer read 28·79 inches at 4 a.m. of Monday. Hail fell on the afternoon of this day, which was rough and squally. During Tuesday finer weather prevailed, but lightning was seen after nightfall. A new and deep depression arrived off the North of Ireland on Tuesday, causing a renewal of bad weather. After this the barometer rose slowly in Ireland, while some secondary disturbances kept the weather unsettled in England. At 8 a.m. of Friday the thermometer read 33° at Loughborough, 35° at Parsonstown, 48° in London (where there was a dense fog), and 53° at Prawle Point. In Dublin the mean height of the barometer was only 29·365 inches—pressure decreased from 29·757 inches at 9 a.m. of Sunday (wind, W.) to 28·790 inches about 4 a.m. of Monday (wind, S.W., force 11). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·8°. The mean of the daily highest and lowest temperatures was 48·5°. The thermometer in the screen rose to 57·4° on Monday and fell to 39·1° on Friday. Rain fell on four days to the amount of ·746 inch, of which ·548 inch was entered to Sunday.

The earlier part of the week ending Saturday, the 19th, was calm and fair in Dublin—during the latter part a rainstorm of exceptional violence prevailed. On Monday morning the first hoar-frost of the season was observed, the thermometer falling to 28·6° on the grass and to 35·2° in the screen. On Tuesday an extensive, but not deep, depression lay off the northwest of Ireland, so that the weather fell into an unsettled state, with S.W. winds and showers. Wednesday proved fine and bright, after a dull, damp, morning. In England a heavy rainfall occurred on this day. Thursday was at first fine, afterwards showery. At night the barometer gave way decidedly, as a deep V.-shaped depression slowly approached Ireland from the westward. Squally S.E. winds sprang up and a continuous rain set in, which in Dublin lasted to the close of the week. At noon on Saturday, the wind shifted from E. by S. to W. by S., as the centre of the low pressure system passed over the city. In Dublin the mean height of the barometer during the week was 29·626 inches. Pressure ranged between 29·941 inches, at 9 P.M. of Sunday (wind,

W.N.W.), and 29·101 inches, a 9 P.M. of Saturday (wind, W.) The mean dry bulb temperature at 9 A.M. and 9 P.M. was 48·3° The mean of the daily highest and lowest readings of the thermometer was 49·2°. Temperature in the screen fell to 35·2° on Monday and rose to 57·3° on Tuesday. Rain fell on five days to the large amount of 2·014 inches—the measurement on Friday was ·780 inch, and that on Saturday was ·944 inch.

The week ended the 26th was again a period of unsettled rainy weather—especially on the east and south coasts of Great Britain and Ireland. In the central districts of the latter country, it was much finer and towards the close of the week some sharp frosts were experienced—the shade thermometer falling at Parsonstown, King's County, to 30° on Thursday and 28° on Friday. The general distribution of atmospherical pressure during the greater part of the week was peculiar—thus areas of high pressure existed over the extreme North of Europe and over the Mediterranean and Algeria, while a band of low pressure—in which there were several distinct minima—stretched across Central Europe from the south of the United Kingdom to Southern Russia. It was in this trough of low barometer that the weather was so bad. Towards the end of the week a depression was found over the Peninsula. Winter may be said to have set in over Northern Russia on Tuesday, the 22nd, when the thermometer marked 22° at 8 A.M. at Archangel. In Dublin every day was more or less showery, and on Monday evening vivid lightning was frequently seen to the southward, accompanied by thunder at 8 P.M. On Friday night there were heavy hail showers. The mean barometer reading was 29·836 inches, pressure ranging from 29·094 inches at 9 A.M. of Sunday (wind, E. by N.) to 30·293 inches at 9 P.M. of Friday (wind, N.E. by E.) The mean dry bulb temperature at 9 A.M. and 9 P.M. was 47·6°. The mean temperature deduced from the daily extremes was 47·1°. The thermometer rose to 53·0° on Monday, and fell to 38·1° on Thursday. Rain was measured on every day, the total quantity being ·900 inch, of which ·330 inch was registered on Friday, and ·321 inch on Monday.

The weather of the last few days of the month (27th–31st) varied considerably. A northerly air current held on Sunday and Monday, the 27th and 28th, in connection with a cyclonic system over the English Channel and Brittany. It caused clouds and showers on the east coasts of Great Britain and Ireland, but inland clear skies and frosty nights prevailed. On the 29th, S.W. winds spread over the whole country, temperature rose fast, and showers and squalls set in. A severe storm occurred on the night of the 31st.

The rainfall in Dublin during the ten months ending October 31st has amounted to 24·789 inches on 169 days, compared with 12·366 inches on 123 days during the same period in 1887, 19·219 inches on

147 days in 1888, and a twenty-three years' average of 22·914 inches on 160·5 days.

At Greystones, Co. Wicklow, the rainfall in October, 1889, was no less than 6·935 inches, distributed over 22 days. Of this quantity, 1·140 inches fell on the 6th, 1·280 inches on the 18th, and ·870 inch on the 19th. Since January 1st, 28·055 inches of rain have fallen at Greystones, on, however, only 112 days.

PERISCOPE.

VACCINAL SYPHILIS.

On August 6th last, Dr. Hervieux, Director of the Vaccination Department at the Academy of Medicine, reported that five cases of vaccinal syphilis had come under his observation among the children that had been vaccinated at the Academy. The most minute inquiry could not discover the source of the accident, as the two subjects from which the vaccine lymph was taken were, to all appearances, perfectly healthy. Dr. Fournier, the well-known syphilographer, however, believed that he found in one of the subjects some induration of the epididymus and of the testicle, which would lead to the supposition of the existence of hereditary syphilis. The anti-vaccinators would, of course, try to make good capital out of this unfortunate, though happily extremely rare, circumstance, and would denounce the whole system of vaccination as being most dangerous to public health. But Dr. Hervieux, anticipating this, declared at the Academy that for the sake of a few regrettable cases vaccination, whether in man or animal, should not be condemned, when it is considered that millions of persons have been benefited by vaccination since its discovery by Jenner. A short time ago a few cases of suspected vaccinal syphilis occurred among some children who had been vaccinated at Motte-en-Bois, in the Department of the North. An inquiry was held, and Dr. Hervieux read the report at the last meeting of the Academy of Medicine of the result, from which it would appear that it was a false alarm, that nothing proved that the accidents or ulcerations which appeared on the children's arms were of a specific character. The appearance of the ulcerations eight or ten days after the vaccination would show that one was in presence of ordinary non-syphilitic accidents.—*The Medical Record*, October 19, 1889.

AN ASEPTIC SUIT.

J. L. Robins, M.D., describes (*New York Medical Journal*, Sept. 7th 1889) an "Aseptic Suit" of his own invention. It is perhaps the best example of a fad which is in existence—that is, if it exists, except in the

author's diagram. It is built of cotton; otherwise it is like a diving-suit. Air enters by double valves under the instep, and percolates up to the mouth. "The wearer supplies himself by an easy treading with an ample quantity of filtered air, drawn in from beneath the feet and forced upwards." What would happen if the user stepped into a pool of water we are not told, but when not walking temporary respiration can be carried on by a funnel and tube. Over each ear is a thin sheet of rubber lined with linen, to allow of the use of the stethoscope without leaving any opening by which germs can enter. The frame of the glass-covered opening over the face has a device for attaching a head-mirror. The inventor intends physicians to wear the dress on their rounds during epidemics, and to be sponged down outwardly with disinfectants. For sporadic cases the aseptic suit is "to be transported in a convenient casing to within safe limits, when the dress is adjusted, the patient visited, and the exterior of the suit disinfected by the atomiser." The inventor also speaks thus of the physician "regaling his being in atmospheric air as pure as that of the Alpine heights, safe behind the barrier of impregnable cotton, that repels the attack of miasmata and cannon-ball alike." Again, "a device which in the hands of intelligent physicians will absolutely stay the spread of contagion." The probable effect on the delirium of patients is not stated. Curiously, this is not a cutting from a comic paper, or dated from the New York State Asylum.

DEAF-MUTISM.

In a very interesting note by Dr. Baratoux (Paris) on deafness, the writer makes out that there exist more than 200,000 deaf-mutes spread all over the surface of the globe. For France, the proportion is 6·25 deaf-mutes per 10,000 inhabitants; and in 1880 the enlisting committee of the Department of the Seine had to reject sixty-seven young men affected with diseases of the ears, while only sixty were rejected for pulmonary phthisis, and sixty-five for diseases of the heart. It is lamentable to think, says the author, that more than one-half of the cases of deafness proceed from the negligence of the laws of hygiene, and can be easily prevented if proper measures be taken to remedy the morbid causes which prepare the deaf-mutes. It has been demonstrated that, notwithstanding certain statistics, deafness at birth is rare, that it represents at the most one-fourth of the total number of deaf-mutes. But it is in the early part of the life of the child that the deafness most frequently occurs, resulting from lesions more or less unperceived, and thus appears to be congenital. Deaf-mutism at birth is caused by consanguineous marriages, marriages between deaf-mutes, and certain fœtal malformations little known. Infantile deaf-mutism is caused by lesions which may be produced by the improper application of the forceps, nasal catarrh of the new-born babe, falls on the head, tight compression of the

ear by a cap, exposure to cold, negligence of cleanliness, introduction of foreign bodies into the ear. Among the causes of deaf-mutism, heredity plays a part much less important than is generally supposed. The proof is that deaf-mutes almost always give birth to children who hear and speak well. The proportion rises a little when one of the parents is a deaf-mute and the other hears. Consanguineous marriages, which represent in France about two per cent. of marriages, produce about one-fifteenth of congenital deaf-mutism. Dr. Ladreit de Lacharrière, a well-known aurist, has laid it down as an axiom that whenever a child loses its hearing during the first eight years of its existence, it becomes dumb by its forgetfulness of language, and until the age of four years this mutism is fatal.—*The Medical Record*, October 19, 1889.

HYPODERMIC INJECTION OF TESTICULAR FLUID.

W. A. Hammond, M.D., gives (*New York Med. Journal*, August 31, 1889) an account of ten cases in which he injected the expressed juice of the testicles of dogs and guinea-pigs. In two cases it rapidly and completely cured severe muscular rheumatism. One of the cases was a woman, and, as might be expected (if the juice have any specific action), the injection had no effect except merely to cause the formation of an abscess.

OVARIOTOMY IN A GIRL AGED SEVEN YEARS.

W. D. Hamaker, M.D. (*New York Med. Journ.*, Sept. 14, 1889), records a case of ovarian tumour in a girl seven years old in which he performed ovariotomy successfully. The patient had not shown any signs of puberty.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

New Antiseptic Artificial Membrana Tympani.

We have received from Messrs. Burroughs, Wellcome, & Co., a box containing a number of the new antiseptic artificial membranæ tympani, invented by Dr. John Ward Cousins, of Portsmouth.

The inventor gave a demonstration of the use of this ingenions invention in the Theatre of the Leeds Infirmary, at the meeting of the British Medical Association, last August.

The new membrane which Dr. Cousins advocates is in shape exactly like a hat with a very high and tapering crown and a broad and flat brim, having a short ribbon attached to the edge. The material is composed of compressed cotton fibres, swollen by prolonged immersion, and saturated in an antiseptic oil and ether. The weight varies a little according to size, from $\frac{1}{6}$ to $\frac{1}{4}$ grain. They are very easily introduced and removed, and the inventor claims for them that they are in every way better than any other form of artificial drum ever before introduced.

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Printed by JOHN FALCONER, 53 Upper Sackville-street, Dublin.

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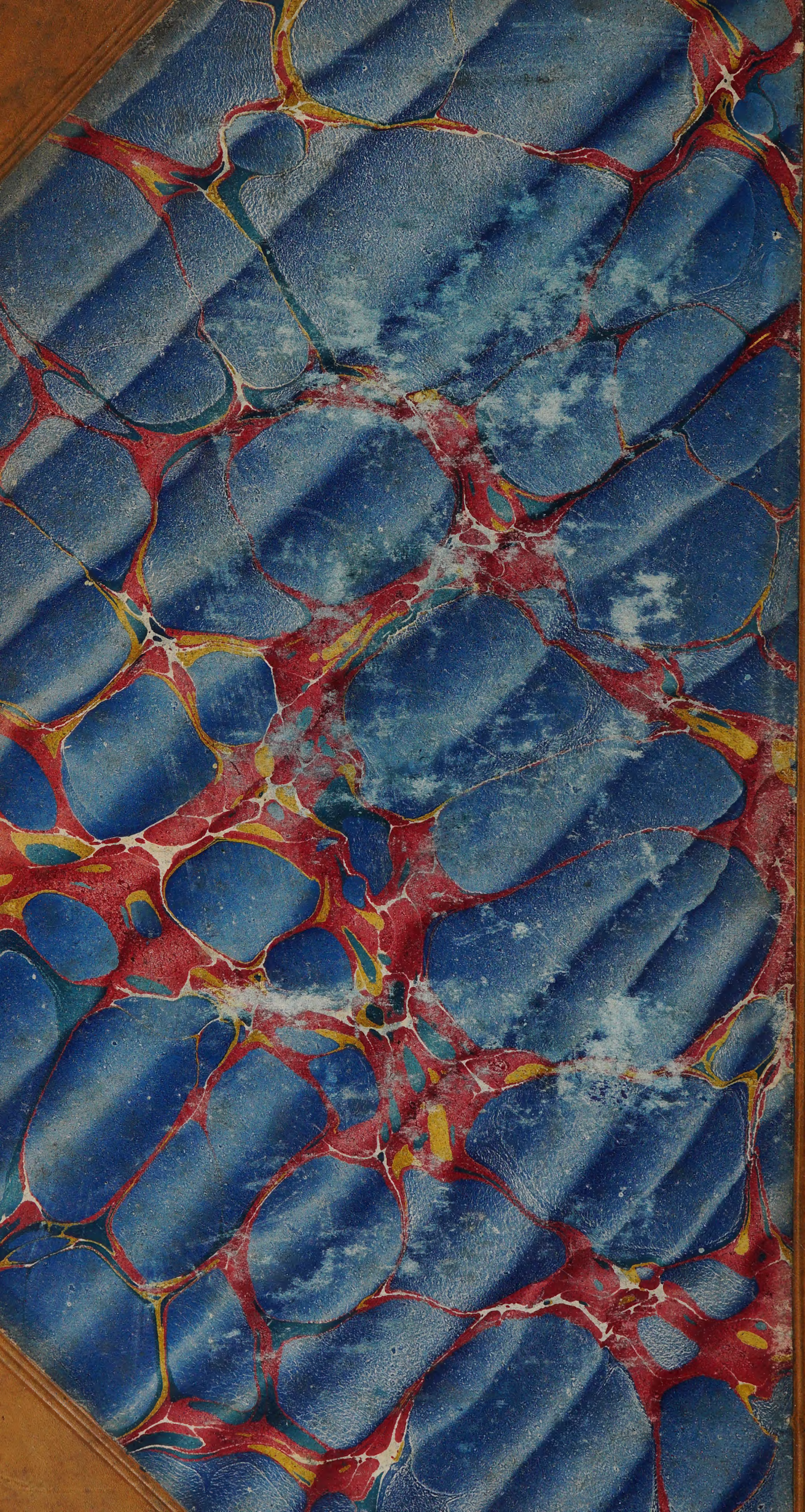
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